FINAL EVALUATION REPORT

for the

OREGON SCHOOL LIBRARY INFORMATION SYSTEM

2000-2001 TLCF PROJECT OF STATEWIDE SIGNIFICANCE

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SUMMARY OF RESULTS AND CONCLUSIONS

The 2000-2001 OSLIS TLCF Project of Statewide Significance developed both outcome and process indicators of success. The project was designed to improve student achievement in the content areas, as measured by performance on library research projects and statewide assessments. This was to be accomplished through training and ongoing continued professional development for library media specialists focusing on: 1) collaborating with teachers; 2) providing students and teachers instruction on the use of information technology and key information literacy skills; and, 3) using these technologies and skills in the context of online database resources.

The evidence collected yielded the following results:

- Performance in OSLIS **high schools** on the Oregon statewide assessments continued to be strong, both from an internal-longitudinal and external-comparative standpoint. Performance at the middle school was fairly weak, both from an internal-longitudinal and external-comparative standpoint. Finally, performance at the elementary level (as measured on the 5th grade assessments) was mixed in both cases.

- Small numbers and a lack of a strong and unique school-wide intervention may have had some bearing on the above results, though this does not explain the widely different results found for the elementary, middle and high school levels. Over the past four years of evaluating the OSLIS project, results at the high school level have consistently been the strongest.

    - Teachers across all levels of schooling indicated improved student performance on classroom research assignments and projects. Planned collaboration between library media specialists and teachers resulted in the vast majority of teachers indicating that students had greater success in finding more, and more relevant, information to support their projects than in the past. This success, they felt, led to higher levels of success and higher overall levels of quality in student work.

    - Planned collaboration between library media specialists and teachers resulted in specific changes in behavior in the areas of using information technology and improved information literacy skills being observed and documented in both students and staff.

    - Participants were able to implement what they had learned at the training sessions, though certain recurring challenges were faced and implementation was uneven both across schools and across students and teachers within schools. Chief among these were lack of time, slow and/or old technology, and database "glitches." The online databases were accessed and made use of by students and staff extensively during the year.

    - The continued professional development provided through the project was based on identified needs and offered at different times and at different locations across the state. This helped assure that the training activities were appropriate and equally accessible by all participants. For some less experienced participants the breadth and depth of the training was not sufficient to provide them with all of the knowledge and skills they needed to adequately instruct and support teachers and students.

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- Participants at training sessions indicated both a high level of satisfaction and a high level of knowledge and skill acquisition related to infusing the use of information technology, access to online databases, and instruction around information literacy skills.

Conclusions

The OSLIS TLCF Project of Statewide Significance plowed new ground this year in two areas. First was the widespread inclusion of elementary schools. Prior to this year OSLIS had piloted programs in 10 elementary schools. Access to and use of information technologies, in conjunction with the development and use of information literacy skills around on-line databases, was tremendously uneven across the elementary schools participating this year. Supporting these diverse participants was a challenge possibly not fully appreciated at the beginning of the year.

Second, for the first time, an on-line database was available to all schools in the state through the support of TLCF funds. The implementation of this resource at the statewide level required more time and effort than expected. Extensive efforts were needed to advertise the availability of these resources. Ongoing technical issues needing to be resolved to allow customization of access at the local level was a drain on all involved. Finally, there was a need to coordinate a massive statewide training effort around EBSCOhost and OSLIS resources. The full impact of these "growing pains" on the overall implementation and outcomes of the project are not fully known, but they were evident.

Significant barriers do exist, and will continue to exist, in achieving the widespread, effective, and efficient use of technology to improve student achievement. Hardware, software, attitudes, time, abilities, and knowledge all continue to be identified as factors inhibiting widespread success in this area. The evaluation of this year's project, as in the past, clearly indicates that a set of necessary conditions must be in place for the use of technology to have widespread and significant impact on teaching and learning.

It may be that the very nature of the intervention - promoting information literacy skills, the use of information technology and on-line databases – is most promising at the high school level. A larger number of the necessary conditions are in place at the high school level than at the middle or elementary school level.

The unique needs of elementary participants and less experienced and able participants may not have been fully anticipated or met. Overall, this group of participants was certainly the most diverse yet and faced challenges in their settings not broadly experienced before by OSLIS. The effects of the "digital divide" may have come into play to a greater extent this year than in past years. Additionally, the energy needed to oversee the statewide implementation of the EBSCOhost database may have diverted energy from supporting all participating schools to the extent needed.

Overall, the design of the project, as proposed, seemed to be adequate to ensure success in participating schools, especially high schools and schools with more experienced and able Library Media Specialists. Collaboration between library media specialists and teachers to design meaningful learning activities that make use of information technologies and information literacy skills would, based on all available information, appear to be one avenue to achieving the outcomes of the TLCF Program.

PART 1. INTRODUCTION AND BACKGROUND

Purpose and Rationale

The main purpose of this evaluation was to determine the success of the 2000-2001 OSLIS project in achieving the purpose of the TLCF program - to assist schools in using technology to improve the achievement of all students in the various content areas, and the processes by which this occurred.

The primary vehicle for achieving this goal was training and ongoing professional development for library media specialists. This training focused on: 1) collaborating with teachers to plan and implement classroom projects making use of information literacy skills, information technology and on-line databases; 2) providing students and teachers instruction on the use of information technology and key information literacy skills; and, 3) using online database resources.

Prior to receiving funding through the 2000-2001 TLCF Project of Statewide Significance, OSLIS was funded on a pilot basis through LSTA funds from the Oregon State Library as well as a 1999-2000 TLCF Project of Statewide Significance. Through the intensive study of these prior efforts in elementary, middle and high schools a specific "logic model" was developed that flowed from availability of high quality database resources to increases in student achievement. Six major components make up this model, with continued professional development and training playing a pivotal role and serving as a major focus for this project.

The logic model flows as follows:

1. Obtaining high quality and low-cost online database resources for school libraries through a consortium approach to purchasing; PLUS,

2. Developing high quality curricular materials/tutorials on how to access and make use of these, and other, resources for Library Media Specialists, Teachers, and Students; PLUS,

3. Providing high quality training on these skills for Library Media Specialists, Teachers, and Students; PLUS,

4. Implementing acquired knowledge and skills with students and staff and encouraging high levels of use of the online data bases, WILL LEAD TO,

5. Higher levels of information literacy on the part of students and teachers; greater alignment in the design of student projects with CIM/CAM/PASS required student work samples; more effective and efficient information acquisition by students and teachers; and, greater critical evaluation of the information used by students;

AND WILL RESULT IN,

6. Higher quality of student work involving library research; greater equality of opportunity to achieve CIM/CAM/PASS Standards in English, science, social science, and the arts; and, higher scores on CIM/CAM/PASS rated student work samples and statewide assessments.

Steps one and two were already in place. The major focus for determining the success of the project was in evaluating steps 3 - 6.

Evaluation Questions - Indicators of Project Success

Eight indicators of project success were identified in the proposal or subsequently identified over the course of the project year, including both outcome and process indicators. Process indicators are included to help explain the degree to which the outcomes were achieved.

Outcome Indicators

1. Student performance improves over time in OSLIS schools on statewide assessments.

2. Student performance improves on classroom research assignments and projects making use of information literacy skills; and,

3. Students and staff exhibit increased use of information technologies and higher levels of information literacy skills.

Process Indicators

4. Students and staff use the online resources made available through OSLIS;

5. Participants implement the knowledge and skills they acquire through the CPD sessions with students and staff;

6. Participants gain valuable and usable knowledge and skills;

7. Participants are satisfied with the content, format, quality, and likely impact of the CPD activities; and,

8. CPD activities are adequate and appropriate.

Data Collection Procedures and Sources

The evaluation of 50 schools located across the entire state necessitated a survey approach to data collection and the use of extant databases. Six major data sources were used to conduct this evaluation. These included:

✓ Participant satisfaction and knowledge acquisition instruments for initial and follow-up CPD events (Evaluation Form 6 and October 13 OSLIS Evaluation Form)
✓ A follow-up implementation survey to determine participant activities with teachers and students (Evaluation Form 7);

✓ Online product usage statistics;

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- ✓ A teacher satisfaction and student learning survey (Evaluation Form 8);

- ✓ Extant demographic databases available on the ODE website; and,

- ✓ Oregon statewide assessment results.

In combination these data sources allow the various steps in the logic model to be described and the indicators of project success to be assessed and evaluated. The connections between the logic model, indicators of project success and data sources are shown in Figure 1.

Data Analysis

The combination of process and outcome indicators and the use of both qualitative and quantitative data necessitated a variety of analytic methodologies. Primary among these was the use of simple descriptive statistics, content analyses, and tests of statistical significance.

Confounding Factors

In past evaluation efforts, OSLIS, as an intervention, could be considered fairly unique and implemented only in schools participating in the projects. This year, however, with the purchase of a statewide license making the on-line databases available in all schools in the state in conjunction with a significant statewide effort to provide training around OSLIS and EBSCOhost resources, this was no longer the case.

The only aspects of OSLIS as an intervention unique to schools participating in the 2000-2001 TLCF Project of Statewide Significance were orientation and training around TLCF project requirements and collaborative projects with classroom teachers to design and implement research projects making use of information literacy skills, information technology skills and on-line databases. Collaboration projects, which were the primary outcome of this training, typically were conducted with two or three teachers within a school. Thus any school-wide effects through broader orientations for teachers and information literacy skill development instruction with students and teachers was not limited to just OSLIS schools.

While this does not have a bearing on the internal evaluation of the 2000-2001 OSLIS TLCF Project of Statewide Significance, it does make comparative analyses of state wide assessment data with non-OSLIS schools problematic and somewhat moot. In many respects all Oregon schools have become OSLIS schools.

Figure 1. Connections between logic model, indicators of project success and data sources.

Logic Model Component	Indicators of Success	Data Sources
Providing high quality training on these skills for Library Media Specialists, Teachers, and Students, PLUS	CPD activities are adequate and appropriate. Participants are satisfied with the content, format, quality, and likely impact of the CPD activities. Participants gain valuable and usable knowledge and skills.	OSLIS Evaluation Form #6 OSLIS October 13 Evaluation Form
Implementing acquired knowledge and skills with students and staff, COMBINED with high levels of use of the online data bases, WILL LEAD TO,	Participants implement the knowledge and skills they acquire through the CPD sessions with students and staff. Students and staff use the online resources made available through OSLIS.	OSLIS Evaluation Form 7 Online product usage statistics
Higher levels of information literacy on the part of students and teachers; greater alignment in the design of student projects with CIM/CAM/PASS required student work samples; more effective and efficient information acquisition by students and teachers; and, greater critical evaluation of the information used by students; AND WILL RESULT IN,	Students and staff exhibit increased use of information technologies and higher levels of information literacy skills.	OSLIS Evaluation Form 7 Online product usage statistics; OSLIS Evaluation Form 8.
Higher quality of student work involving library research; greater equality of opportunity to achieve CIM/CAM/PASS Standards in English, science, social science, and the arts; higher scores on CIM/CAM/PASS rated student work samples and statewide assessments.	Student performance improves on classroom research assignments and projects making use of information literacy skills. Student performance improves over time in OSLIS schools on statewide assessments.	OSLIS Evaluation Form 8. Extant demographic databases available on the ODE website. Oregon statewide assessment results.

TLCF Program Requirements

One requirement for a TLCF Project of Statewide Significance is that it serve at least one third of the landmass of the state or one third of the educational population. In addition, a key priority of the program is to serve schools with the highest percentages of students in poverty and the greatest need for technology.

The purchase of a statewide license for EBSCOhost to provide free access to all schools in Oregon certainly fulfills this requirement. In addition, the schools participating in the more intense professional development activities meet this requirement.

OSLIS School Demographics: Geography and Students

All schools in Oregon were invited to apply for the project. During this project year, OSLIS served schools in 19 of Oregon's counties representing all geographic regions of the state.

The 2000-2001 OSLIS project included 28 schools serving elementary aged students, 8 schools serving middle school aged students, and 14 school serving high school aged students. In sum, the schools serve a combined 24,000 students in ALL geographic regions of Oregon.

OSLIS School Demographics: Levels of Poverty

The most accessible level-of-poverty index is the percentage of students qualifying for free or reduced lunch. An analysis of data available through the ODE under the e-rate database allows for Oregon schools to be divided into groups based on the percentage of students qualifying for free and or reduced lunch.

The proportion of students qualifying for free or reduced lunch differs considerably by the level of schooling. That is, the higher the level of schooling the lower the level of students qualifying. These overall distributions are shown in Table 1.

Table 2 shows the distribution of 2000-2001 OSLIS elementary schools by level of poverty and setting. As a whole, 2000-2001 OSLIS Elementary schools are fairly evenly split between urban/suburban settings and rural settings and are distributed more heavily on the higher end of the poverty scale (as measured by the percent of students qualifying for free or reduced lunch).

Table 3 shows the distribution of 2000-2001 OSLIS middle schools by level of poverty and setting. The small number of schools make comparisons to the state as a whole difficult. Again, at the middle school level, OSLIS schools are evenly divided between urban/ suburban and rural settings. OSLIS middle schools fall more heavily into the high end of the poverty scale than the overall state distribution.

Table 1. Percent of students qualifying for free or reduced lunch program by level of schooling.

Level of Poverty	Level of Schooling		
	Elementary	**Middle**	**Secondary**
0-20% Qualify for Free/Reduced Lunch	16.6% of schools	17% of schools	37.4% of schools
20-40% Qualify for Free/Reduced Lunch	28.7% of schools	41.5% of schools	44.9% of schools
Over Qualify for 40%Free/Reduced Lunch	54.7% of schools	41.5% of schools	17.7% of schools
Median % of students qualifying for F/R lunch	**42.41%**	**35.88%**	**25.88%**

Table 2. Percent of students qualifying for free or reduced lunch program in 2000-2001 OSLIS Elementary Schools

Level of Poverty	Urban/Suburban School	Rural School	Total
0-20% Qualify for Free/Reduced Lunch	3	1	**4 (14.3%)**
20-40% Qualify for Free/Reduced Lunch	1	6	**7 (25%)**
Over Qualify for 40%Free/Reduced Lunch	9	8	**17 (60.7%)**
Total	**13**	**15**	**28**

Table 3. Percent of students qualifying for free or reduced lunch program in OSLIS Middle Schools

Level of Poverty	Urban/Suburban School	Rural School	Total
0-20% Qualify for Free/Reduced Lunch	1		**1 (12.5%)**
20-40% Qualify for Free/Reduced Lunch	1	1	**2 (25%)**
Over Qualify for 40%Free/Reduced Lunch	2	3	**5 (62.5%)**
Total	**4**	**4**	**8**

Table 4 shows the distribution of OSLIS high schools by level of poverty and setting. 2000-2001 participating OSLIS high schools are predominantly rural. They also tend to be distributed more heavily toward the high end of the poverty level than the state as a whole.

Table 4. Percent of students qualifying for free or reduced lunch program in OSLIS High Schools

Level of Poverty	Urban/Suburban School	Rural School	Total
0-20% Qualify for Free/Reduced Lunch		4	**4 (28.6%)**
20-40% Qualify for Free/Reduced Lunch	1	5	**6 (42.8%)**
Over Qualify for 40%Free/Reduced Lunch	1	3	**4 (28.6%)**
Total	**2**	**12**	**14**

OSLIS School Demographics: Baseline Performance on Statewide Assessments

Summary statistics for student performance on the statewide Reading and Literature is shown in Table 5. Overall baseline performance on the Reading and Literature assessment is slightly lower for 2000-2001 OSLIS schools than for non-OSLIS schools.

Table 5. 1999-2000 Baseline Reading & Literature Performance

Percent of Students Meeting & Exceeding Standards	Population	
	State	OSLIS
Elementary School (Gr.5)		
Maximum	100%	92%
Average	74%	74%
Minimum	22%	44%
Middle School (Gr. 8)		
Maximum	100%	77%
Average	61%	57%
Minimum	0%	17%
High School (Gr. 10)		
Maximum	94%	69%
Average	44%	43%
Minimum	0%	9%

Settings Summary

Overall, the 2000-2001 OSLIS TLCF project has indirectly served all Oregon students through the purchase of the statewide license for EBSCOhost. In addition, more than 24,000 Oregon students in 50 schools from 19 counties were served through more intensive CPD activities.

These 24,000 students are in schools representing all geographical regions and from inner city schools to rural and remote schools.

These 24,000 students attend school of all sizes, ranging from about 100 students to more than 1350 students in districts ranging in size from 214 students to over 50,000 students. In addition to serving tradition public K-12 schools, the 2000-2001 OSLIS project served one alternative school, one private school and the Oregon School for the Deaf.

These students attended schools representing all levels of affluence, ranging from less than 5% of students qualifying for free or reduced lunch to over 88% of students qualifying for free or reduced lunch.
Overall, 1999-2000 baseline performance in OSLIS schools was slightly below the state average on the

Statewide Reading and Literature assessment at grades 5, 8, and 10.

This year's participants, in terms of schools, Library Media Specialists, students and staff, were by far the most diverse group yet to take part in OSLIS. They were the most diverse in terms of existing technical infrastructure, experience with on-line databases, willingness on the part of classroom teachers to collaborate, sophistication in teaching information literacy skills, and geography. This diversity will become evident in the section on implementation and to a lessor degree, outcomes.

PART 3. RESULTS

The evaluation results are presented against the overall project logic model and the indicators of project success shown in Figure 1. Each section will identify the success indicators and the sources of data used to judge success. Sections include:

- **Section One** presents results for improvements in student achievement on statewide assessments and performance on library research assignments.

- **Section Two** presents results on the use of information technologies and level of information literacy skills by students and teachers.

- **Section Three** presents results on the implementation of knowledge and skills by participants in their school settings and the level of use of the online resources by participating OSLIS schools.

- **Section Four** presents results on the adequacy and appropriateness of the professional development activities, the level of participant satisfaction with the CPD activities and the knowledge and skill acquisition by participants.

Section 3.1. Improved Student Achievement and Performance

Two indicators of success were identified in evaluating the impact of the 2000-2001 OSLIS project on student achievement. These included:

1. Student performance improves over time in OSLIS schools on statewide assessments.

2. Student performance improves on classroom research assignments and projects making use of information literacy skills.

In judging the success of the project in increasing student achievement in these two areas, two data sources were used. These included: statewide assessment data at the school level and OSLIS Teacher Satisfaction Form #8.

Performance on Statewide Assessments

The indicator of success is that students would demonstrate improved performance on the statewide assessments.

The data sources are the *school level* results on each of the statewide assessments from 1998 through 2001. The metric used in all analyses is the total percent of students who meet or exceed the standard.

Analyses

We have looked at performance on the statewide assessments from several perspectives:

- *Percentage point changes* in the mean percentage of students meeting or exceeding the standard for OSLIS schools as a group from 2000 to 2001 on the statewide assessments in Mathematics, Reading and Literature, Math Problem Solving, and Writing.

- *Comparisons* of the mean percentage of students meeting and exceeding the standard in OSLIS and Non-OSLIS schools, as groups, on the 2001 administration of the statewide assessments in Mathematics, Reading and Literature, Mathematics Problem Solving, Writing, and Science.

- *Longitudinal percentage point changes* in the mean percentage of students meeting and exceeding the standard between OSLIS and non-OSLIS schools from 1998 to 2001 in Mathematics, Reading and Literature, Math Problem Solving, and Writing.

In past years an analysis was conducted comparing the performance of students in low SES schools between OSLIS and non-OSLIS schools. Sample size does not permit such an analysis to be conducted this year. However, a comparison of all OSLIS and non-OSLIS high schools over the past several years (pooled across projects) indicates a roughly 10 percentage point difference in the percent of student meeting and exceeding the state standards. That is, about

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Table 6. Changes in Performance from 2000 to 2001 in OSLIS schools

Test - Grade	Percent Meeting/Exceeding the Standard		Difference
	2000 Average	2001 Average	
Mathematics-5	68.9%	71.3%	+2.4%
Reading & Literature-5	74%	75.2%	+1.2%
Math Problem Solving-5	58.4%	73.5%	+15.1%
Writing-5	34.6%	26.4%	-8.2%
Mathematics-8	60.1%	52.1%	-8.0%
Reading & Literature – 8	57.0%	55.7%	-1.3%
Math Problem Solving – 8	53.3%	54.2%	+0.9%
Writing - 8	38.3%	34.0%	-4.3%
Science-8	48.7%	47.3%	-1.4%
Mathematics - 10	35.6%	38.6%	+3.0%
Reading & Literature – 10	45.0%	49.4%	+4.4%
Math Problem Solving – 10	37.5%	49.5%	+11.9%
Writing – 10	32.6%	42.9%	+10.3%
Science-10	50.9%	54.2%	+3.3%

10% more students in low SES OSLIS schools meet or exceed the standard that in similarly low SES schools not a part of OSLIS. This result is consistent across all five assessments and is highly significant statistically.

Changes in Performance from 2000 to 2001

Table 6 presents the average percent of students meeting and exceeding the standard in OSLIS schools in 2000 and 2001 on the statewide assessments in Mathematics, Reading and Literature, Mathematics Problem Solving, Sciences and Writing, as appropriate, at grades 5, 8 and 10.

At the elementary level, 5th grade students in OSLIS schools in 2001 performed slightly better than 5th grade students in these same schools the previous year in all areas except writing, where performance was significantly lower. A significantly larger portion of students met or exceeded the performance standards at grade five in Math Problem Solving. The small number of elementary schools in the sample (28) calls for caution in interpreting these results, both positive and negative.

At middle school level, 8th grade students in OSLIS schools in 2001 did not performed as well as 8th grade students in these same schools the previous year on any of the statewide assessments. The small sample size at grade 8 (8 schools) does not allow statistical analyses to be performed. This small number of schools calls for caution in interpreting these results. For example, if one used a three-year average (1998-2000) as baseline rather than just 2000 results, performance would have greatly increased in Mathematics, Reading and Literature and Math Problem Solving.

At the high school level, 10th grade students in OSLIS schools in 2001 performed slightly better than 10th grade students in these same schools the previous year on the statewide assessments in Reading & Literature, Mathematics and Science. On the Writing and Math Problem Solving assessments, 10th grade students in OSLIS schools in 2001 performed much better than 10th grade students in these same schools the previous year The small sample size at grade 10 (14 schools) does not allow statistical analyses to be performed. This small number of schools calls for caution in interpreting these results.

Overall, students in elementary schools participating in OSLIS performed slightly better in 2001 than their counterparts in these same schools on the 2000 administration of state assessments on three of the four assessments. Students in middle schools participating in OSLIS performed slightly worse in 2001 than their counterparts in these same schools on the 2000 administration of state assessments on four of the five assessments. On a more positive note students in high schools participating in OSLIS performed slightly or much better in 2001 than their counterparts in these same schools on the 2000 administration of state assessments on all five assessments.

The small number of schools this year participating in the OSLIS TLCF project calls for caution in making any interpretations in these data.

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Table 7. Comparative Analysis of 2001 State Assessments

Test - Grade	Percent Meeting/Exceeding the Standard		Difference
	OSLIS Schools	**Non-OSLIS Schools**	
Mathematics-5	71.3% (n=27)	73.8% (n=671)	-2.5%
Reading & Literature-5	75.2% (n=27)	77.0% (n=670)	-1.8%
Math Problem Solving-5	73.5% (n=27)	73.5% (n=664)	0
Writing-5	26.4% (n=27)	32.4% (n=664)	-6.0%
Mathematics-8	52.1% (n=7)	52.1% (n=296)	0
Reading & Literature – 8	55.7% (n=7)	59.3% (n=296)	-3.6%
Math Problem Solving – 8	54.2% (n=6)	52.2% (n=285)	+2.0%
Writing - 8	34.0% (n=6)	33.0% (n=285)	+1.0%
Science-8	47.3% (n=7)	58.3% (n=292)	-11.0%
Mathematics - 10	38.6% (n=14)	32.9% (n=187)	+5.7%
Reading & Literature – 10	49.4% (n=14)	44.6% (n=187)	+4.8%
Math Problem Solving – 10	49.4% (n=14)	44.8% (174)	+4.6%
Writing - 10	42.9% (n=14)	40.9% (n=180)	+2.0%
Science-10	54.2% (n=14)	47.6% (n=182)	+6.6%

2001 Performance Comparisons

A second analysis was conducted to determine how the performance of students in OSLIS schools compared to the performance of students in non-OSLIS schools.

As can be seen in Table 7, results of this analysis were uneven across grade levels. On average, students in OSLIS elementary schools performed at the same level or at lower levels than students in non-OSLIS schools. At grade eight, students in OSLIS middle schools better on some assessments, and worse on other assessments than students in non-OSLIS schools. At grade 10, however, students in OSLIS high schools consistently outperformed students in non-OLSIS schools. The small number of schools this year and the reduction in definable difference in an intervention between OSLIS and non-OSLIS schools calls for caution in making any interpretations in these data.

Longitudinal Results

A longitudinal analysis of the average percent of students meeting and exceeding the standard from 1998 - 2001 in Mathematics, Reading & Literature, Math Problem Solving and Writing was also conducted as a "value added" approach to analysis. 1998 was used as a baseline as it was the first year of OSLIS. Schools are sorted into four cohorts to investigate whether any cumulative effects can be found in the statewide assessment data. The cohorts include the first 18 OSLIS pilot schools that have been involved the longest, last year's 83 OSLIS schools, this year's OSLIS schools, and all non-OSLIS schools statewide.

Table 8 presents these longitudinal results for grade eight and grade ten. While the pattern of results is not as strong at grade eight, OSLIS schools have out performed non-OSLIS schools on eight of the twelve possible comparisons. At grade 10, OSLIS schools have out performed non-OSLIS schools on all twelve possible comparisons. Differences are especially pronounced in Mathematics and Writing. In 20 out of the 24 cases (83.3%) where longitudinal comparisons were possible, schools that have been a part of OSLIS have seen greater improvement in student performance over the past four years than schools which have not been a part of OSLIS. This patter is especially strong and stable at the high school level.

Summary of Statewide Assessment Results

Did student achievement on the statewide assessments improve? This question was addressed from several perspectives. The results presented here been descriptive in nature, and no causation can explicitly be attributed to OSLIS. The following results were found:

- Changes in performance on statewide assessments from 2000 to 2001 in OSLIS schools were uneven. Elementary and middle school students showed little or no improvement except on Math problem Solving at grade 5. High school students did, however, continue to show strong performance gains.

- Again, while students in OSLIS high schools consistently out-performed their peers in non-

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Table 8. Longitudinal Comparison of OSLIS and Non-OSLIS Schools

Grade Cohort Year	Percent of Students Meeting and Exceeding the Standard			
	Reading & Literature	Mathematics	Math Problem Solving	Writing
Grade 8 Results				
Pre-TLCF				
1998	52.2%	47.2%	35.0%	31.8%
2001	60.2%	55.0%	49.8%	36.0%
Change	**(+8.0%)**	**(+7.8%)**	**(+14.8%)**	**(+4.2%)**
99-00 TLCF				
1998	54.2%	48.4%	41.1%	30.3%
2001	60.5%	52.4%	52.6%	34.5%
Change	**(+6.3%)**	**(+6.0%)**	**(+11.5%)**	**(+4.2%)**
00-01 TLCF				
1998	45.6%	43.1%	42.3%	34.0%
2001	55.7%	52.1%	54.2%	34.0%
Change	**(+10.1%)**	**(+9.0%)**	**(+11.9%)**	**(0)**
Non-OSLIS				
1998	52.1%	47.5%	37.6%	32.6%
2001	59.3%	52.1%	52.2%	33.0%
Change	**(+7.2%)**	**(+4.6%)**	**(+14.6%)**	**(+0.4%)**
Grade 10 Results				
Pre-TLCF				
1998	48.4%	32.6%	33.9%	36.5%
2001	54.3%	46.2%	54.1%	48.3%
Change	**(+5.9%)**	**(+13.6%)**	**(+20.2%)**	**(+11.8%)**
99-00 TLCF				
1998	46.7%	31%	29.6%	38.2%
2001	51.8%	41.1%	53.2%	50.5%
Change	**(+5.1%)**	**(+10.1%)**	**(+23.6%)**	**(+12.3%)**
00-01 TLCF				
1998	43.3%	28.5%	26.1%	29.5%
2001	49.4%	38.6%	49.4%	42.9%
Change	**(+6.1%)**	**(+10.1%)**	**(+23.3%)**	**(+13.4%)**
Non-OSLIS				
1998	40.5%	26.0%	26%	33.7%
2001	44.6%	32.9%	44.8%	40.9%
Change	**(+4.1%)**	**(+6.9%)**	**(+18.8%)**	**(+7.2%)**

- OSLIS schools on all of the 2001 statewide assessments, results at the 5th and 8th grade levels were mixed, at best.

- On average, student performance in OSLIS high schools has improved more than student performance in non-OSLIS schools over the past several years in all areas tested. Performance at

the 8th grade was less consistent, though still very strong overall compared to non-OSLIS schools.

Based on these results, the answer is equivocal. Performance in OSLIS high schools continues to be strong, both from an internal-longitudinal and external-comparative standpoint. Performance at the middle school was fairly weak, both from an internal-longitudinal and external-comparative standpoint. Finally, performance at the elementary level (as measured on the 5th grade assessments) was mixed from both perspectives.

Small numbers and a lack of a strong and unique school-wide intervention may have had some bearing on these results, though this would not explain the widely different results found for the participating elementary, middle and high schools. Over the past four years of evaluating the OSLIS project, results at the high school level have consistently been the strongest. It may be that the very nature of the intervention - promoting information literacy skills, the use of information technology and on-line databases – is strongest at the high school level. Gaining an answer to this question goes far beyond the bounds of this evaluation, though a growing body of evidence elsewhere would tend to support this hypothesis.

Improvement in Student Classroom Performance

Participating library media specialists administered a survey related to student success and improvement to teachers with whom they had collaborated on library research projects. This survey was to be completed by the teacher after students have finished a major assignment.

Respondents

Eighty-one completed surveys were returned representing 25 of the 2000-2001 OSLIS schools. The judgments made by these teachers reflect the work of approximately 2,100 students.

Table 9. Teacher Survey Respondents

Level of Schooling	Assignment History		Total
	Assigned Previously	Not Assigned Before	
Elementary School	14	21	35
Middle School	9	9	18
High School	13	18	28
Total	36	45	81

The students represented in this sample come from schools ranging from 105 students to 850 students. They come from a range of school settings from rural and remote schools to urban and inner-city schools. They come from schools with less than 5% of the students qualifying for free or reduced lunch to almost 80% of the students qualifying for free or reduced lunch.

Of the 81 teachers, 35 (43%) taught in elementary schools; 18 (22%) in middle schools.; and, 28 (35%) taught in high schools.

Thirty-six of the teachers (44%) had assigned the research project assessed previously, thus allowing comparisons to be made. Forty-five of the teachers had never assigned this specific project before. The data are presented in Table 9.

While small, the sample of teachers does reflect the diversity of the broader population of OSLIS schools.

Results

Results for all respondents are shown in Table 10. All teachers were asked to respond to questions one through three. Teachers who had previously assigned this project were also asked to respond to questions four through 9.

Over seventy percent (72.1%) of the teachers felt that lower performing students had been successful in completing the assigned project with access to OSLIS resources. Very few (5.1%) felt that lower performing students were not successful in completing the project.

Almost three-quarters (73%) of the teachers felt that all students had been successful in completing the assigned project with OSLIS resources.

Of the teachers who had assigned the evaluated project previously, responses were overwhelmingly positive as to the effects on student performance. Over 80% felt that students had found more information than in the past and over 90% felt that students had found more relevant information than in the past. Nearly 90% felt that students had had more success in locating appropriate information than in the past.

Nearly eighty percent (79.4%) of the teachers felt that overall, the quality of the work by students on the assigned project had improved with access to the resources made available through OSLIS.

All but one of the teachers (97.7%) who had previously assigned the project being assessed indicated that student results had improved as a result of working with the library media specialist trained through the OSLIS project.

In comparing the mean responses to each question based on the level of schooling, no statistically significant differences were found between the responses of elementary, middle and high school teachers.

Table 10. Overall distribution of responses

STATEMENT	Strongly disagree	Disagree	Uncertain	Agree	Strongly agree	Mean (N)
	Frequency (Percent)					
1. The online products available through OSLIS are informative and user friendly.		3 (3.8%)	9 (11.3%)	33 (41.3%)	35 (43.8%)	**4.25 (80)**
2. Lower performing students have been successful in completing this project.		2 (5.1%)	18 (22.8%)	46 (58.2%)	11 (13.9%)	**3.80 (79)**
3. All students have been successful in completing this project.		5 (6.4%)	16 (20.5%)	42 (53.8%)	15 (19.2%)	**3.86 (78)**
4. Students found *more* information related to their project than in past years.		3 (8.1%)	4 (10.8%)	15 (40.5%)	15 (40.5%)	**4.14 (37)**
5. The information students found was *more relevant* to their project than in past years.		2 (5.7%)	1 (2.9%)	20 (57.1%)	12 (34.3%)	**4.20 (35)**
6. Overall, students have experienced *greater success* in locating information than in past years.		1 (2.8%)	3 (8.3%)	17 (47.2%)	15 (41.7%)	**4.28 (36)**
7. Overall the quality of work by students on this project was better than it has been in past years.			7 (20.6%)	19 (55.9%)	8 (23.5%)	**4.03 (34)**
8. Report bibliographies include a broader range of resources pertinent to the topic.		2 (5.3%)	3 (7.9%)	15 (39.5%)	18 (47.4%)	**4.29 (38)**
9. Working with the Media Specialist has been informative and improved the results of students' projects.			1 (2.3%)	6 (14%)	36 (83.7%)	**4.81 (43)**

Teacher Comments

Comments made by responding teachers are instructive as to the role the project has had in student learning and performance in the classroom.
On the positive side, teachers commented on a number of things including:

- The development and use of information literacy skills
- The real-life integration of technology in teaching and learning
- The additional resources available to students
- The additional resources available to teachers in planning instruction
- The increased independence students had in directing their own work
- The success students had in finding and using information
- Ability to access resources from home

On the negative side, teachers commented on several issues, including:

- Younger students having trouble navigating the site…it is not as intuitive as the rest of the internet
- Some problems in finding materials with appropriate reading levels
- Slowness due to old and slow computers and filters
- When the internet is down, resources are not available (this is still a common problem in some remote rural areas)

Summary of Classroom Learning

Did student performance on library research assignments improve? This question was addressed by asking classroom teachers to rate and summarize student success and changes in student performance. The sample of teachers indicated the following:

Students had greater success in finding more, and more relevant, information to support their projects than in the past. This success, they felt, led to higher levels of success and higher overall levels of quality in student work.

Teachers were also nearly unanimous in attributing a portion of this improvement in student performance to working with the library media specialist in planning the project, providing instruction around information technology generally, information literacy skills, and the use of the online databases made available through the project.

Did student performance improve on library research assignments? For this sample of teachers who participated in collaborative planning with library media specialists the answer is a fairly unequivocal yes. The great majority of teachers in this sample felt that student work had improved.

The indicator of success identified in evaluating the project at this level was:

- Students and staff will exhibit higher levels of information literacy skills and greater use of information technologies.

In judging the success of the project in achieving this indicator two data sources were used: ratings and descriptive comments from OSLIS Evaluation Form #7 and OSLIS Evaluation Form #8.

Ratings of Impact on Students and Staff

Several months after the initial workshops, participants were asked to rate the level of impact they had had on both teachers and students as a result of implementing or use the knowledge and skill they acquired at the work shop. These ratings are shown in Table 11.

Table 11. Overall distribution of responses on the OSLIS Impact Evaluation Form

Statement	Response				
	Strongly Agree	Agree	Disagree	Strongly Disagree	N/A
There has been an impact on the teachers I work with as a result of implementing what I learned at the workshop	36.1%	55.6%	8.3%		
There has been an impact on the students I work with as a result of implementing what I learned at the workshop	52.8%	44.4%		2.8%	

None of the respondents strongly disagreed with the two statements.

- About 9 out of 10 respondents (91.7%) indicated observing positive impacts on the teachers they worked with as a result on implementing what they had learned at the workshops.

- All but one respondent (97.2%) indicated observing positive impacts on the students they worked with as a result on implementing what they had learned at the workshops.

Observed Changes in Student and Teacher Behaviors

Two sources of data provide evidence on information literacy. First, the follow-up impact evaluation form asks Library Media Specialists to describe the kinds of impact their activities are having on students and teachers. Second, several questions asked directly of teachers on the Teacher Satisfaction Form address issues of student information literacy skills.

Observed Changes in Teachers

Respondents were specifically asked to describe any changes they had observed in teachers over the year as a result of what they had been doing to implement what they had learned to support the infusion of technology into teaching and learning.

Responses were focused primarily on their work in collaborating with the library media specialist and in using the resources for teaching and learning, though many comments do focus on more school-wide observations. Some of the observed changes included:

- Teachers are expanding the focus of projects to take advantage of the information technologies and on-line databases.

- Teachers are more receptive to working with library media specialists to incorporate the use of information technology and online resources into planning classroom assignments.

- Teachers are gaining confidence in using information technology and the online resources in general.

- Teachers are accessing the online resources more often in creating and supporting lesson plans.

- Teachers increasingly use the library media center as an extension of their classrooms.

- Teachers include units in the classroom to ready students for technology implementation in the computer lab and library.

- Teachers are more comfortable with the OSLIS Internet site and challenges when using computers and the Internet for research. Teachers are working to collaborate on projects.

- Many are willing and interested in integrating technology into their curriculum. Their confidence and knowledge has grown.

- Teachers are becoming more involved in teaching students information literary skills.

- Teachers are more willing to try to use the Internet. It has also encouraged them to learn more about other aspects of technology. Many non-users are giving it a try now. Some have even become self-sufficient with their newfound technology.

Observed Changes in Students

Respondents were specifically asked to describe any changes they had observed in students over the year as a result of what they had been doing to implement what they had learned to support the infusion of technology into teaching and learning.

Responses ranged broadly, but focused primarily on improved information literacy skills. As library media specialists, this is the area most likely to be observed. Observed changes included:

While students and teachers are exhibiting increased use of information technologies and higher levels of

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information literacy in a number of ways, by and large they exhibit these behaviors in the following ways:

- Students are becoming more aware of the online resources as an alternative to the web.

- Students are becoming more adept at conducting searches.

- Students are beginning to explore a broader range of topics.

- Students are becoming more independent in conducting their research.

- Students are asking better questions.

- Students are becoming better researchers.

- Students are teaching each other how to effectively and efficiently search for and find appropriate information.

- Students are recognizing the importance of evaluating the information they find.

- Student's research is more in-depth and comprehensive.

- Students are learning to become more comfortable using computers and the Internet for research.

- Students are beginning to understand the predictability involved in technology.

- Students are learning the difference between a "source" and a "reliable source."

- Students are centering better on their topics and able to use search terms to narrow and broaden topics.

- Students are learning that information comes in many different forms.

- Students are learning the value of privacy and to respect the privacy of others in cyber-space.

While these changes certainly are not universal across schools or students, these participants were clear in having observed these positive behaviors on the part of students in the context of doing library research. The diversity of observations in part reflect working with students from 1st or 2nd grade through seniors in high school.

Through their work, participants observed distinct changes in behavior by both students and teachers. Teachers were beginning to make more and better use of information technologies and online resources in their teaching. Students were acquiring and using more sophisticated information literacy skills. While these observed changes were not universal across schools, teachers, or students, inroads are being made.

Summary

The evidence we have to judge whether this indicator of success has been achieved is varied, but when triangulated does support there being higher levels of information technology use and higher levels of information literacy in schools where implementation has been most successful.

Certainly variations in levels of success were evident. Major factors contributing to lower levels of success included lack of access to teacher training opportunities (time and space), technological limitations reducing the opportunities for teachers and students to use information technologies and develop information literacy skills. Two additional factors that came into play in several participating schools included resistance to use by teachers and discomfort on the part of LMS's to work collaboratively with teachers, thus decreasing opportunities for teachers and students to use information technologies and develop information literacy skills.

Participants do, however, indicate positive changes in both teachers and students as a result of implementing what they learned at the OSLIS trainings. Furthermore they are able to describe with clarity what these changes are.

This project was designed to provide teachers and students a clear focus for the use of information technologies, on-line databases and develop and use information literacy skills. Further, the participating Library Media Specialists (LMS's) were provided training on how to provide instruction and support to teachers and students in the use of these resources and skills. Participant LMS's and teachers were able to clearly articulate changes in teachers and students that would indicate this approach was fairly successful in accomplishing this outcome.

Implementation

The indicator of success identified in evaluating the project in this area was:

- Participants implement the knowledge and skills they acquire through the CPD sessions with students and staff;

In judging the implementation success of the project one data source was used - OSLIS Impact Evaluation Form #7. Several months after the initial workshops, participants were asked to rate the degree to which the workshop had provided them with useful knowledge and skills, based on their experiences at their school. They were also asked to rate the degree to which they had been able to implement or use the knowledge and skill they acquired at the workshop.

In addition to making subjective ratings, participants were asked to actually describe what they were doing differently with teachers and students, what they planned on doing differently in the future, what challenges they faced in implementing what they learned, and, areas in which they felt they needed additional training.

Ratings of Implementation

Responses presented here are for a sample of participants who developed an approved teacher collaboration plan. A total of thirty-one participants responded to the follow-up questionnaire. The overall distribution of responses is shown in Table 12.

Table 12. Overall distribution of responses on the OSLIS Impact Evaluation Form

Statement	Response				
	Strongly Agree	Agree	Disagree	Strongly Disagree	N/A
At this time I think the workshop provided me with useful information and skills	61.1%	36.1%	2.8%		
I have been able to implement strategies that were discussed at the workshop	38.9%	58.3%			2.8%

- Overall, 97.2% of the respondent felt that the trainings they attended provided them with useful information.

- Additionally, 97.2% of respondents indicated that they were in fact able to implement strategies they had learned at the workshops.

<u>Descriptive Comments on Activities, Changes, Challenges and Needs</u>

Participants provided rich descriptions of what they were doing in their schools to facilitate the infusion of technology into teaching and learning. A summary of these descriptions is presented here. Full transcripts of comments are provided in Appendix C.

Comments Related to Teachers

Responses to the open-ended questions provide descriptions of activities (both in progress and planned) participants are implementing with teachers. In general, the activities with teachers had the following characteristics:

- It was multi-level, going from the general to the specific in terms of content.

- It was multi-level, going from all faculty, to small groups, to one-on-one.

- It was hands-on in that it directly involved teachers using the information technologies.

- It was content standards based in that it focused on the application of the information
- technologies and online databases to the Oregon content standards.

- It was curriculum-based in that it focused on specific applications for specific projects and assignments.

- It included both workshop instruction and self-learning through the OSLIS Tutorials

The major focus of activities with teachers involved collaboration to plan and implement classroom research projects making use of information literacy skills and information technologies. In addition, the vast majority of respondents indicated working one-on-one or with groups of teachers to familiarize them with the online resources and the OSLIS website. This included such things as how to access and search the data bases, both from the media center, their classroom (if connected) and from home. Advanced search techniques were taught to teachers so they could more effectively and efficiently search online. Teachers were instructed in how they could download a full text document and e-mail it to themselves at work or home for further use.

Many respondents indicated that they were constantly promoting the validity and reliability of the resources provided through OSLIS as an alternative to the World Wide Web. Finally, a significant portion of respondents indicated developing new websites or links off existing home pages for their school to provide easier and better access the tutorials and online resources offered through OSLIS.

In addition to describing what they were already doing with teachers, respondents were asked to describe what they planned on doing in the future. As with last year, the vast majority of responses fell into four categories.

First, participants indicated that they would continue to promote the online resources and OSLIS website as an alternative to the web. Overcoming habits on the part of teachers was described as a

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major effort.

Second, participants indicated they would continue to collaborate with teachers in curriculum planning to take full advantage of what is offered through the OSLIS resources to meet the state benchmarks.

Third, participants indicated that they would continue to provide teachers with group and one-on-one support and inservice on the use of information technology, the online resources available through OSLIS and the information literacy skills need to effectively and efficiently infuse these technologies into teaching and learning.

Finally, participants indicated that they would continue to focus on technologically reluctant colleagues to build their comfort and skill levels to increase the use of information technology into their teaching and learning.

Comments Related to Students

Participants indicated doing a number of things differently with students than they had in the past. Responses from this year's participants were remarkably similar in focus with responses from last year's participants.

In addition to providing intensive instruction and support to the students participating in the collaboration projects, all were providing individual and group lessons and support emphasizing the use of the online resources and the OSLIS website using information technology and advanced information literacy skills.

This instruction included such things as how to access and search the data bases, both from the media center, their classroom (if connected) and from home. Advanced search techniques were taught so they could more effectively and efficiently search online. Citing work was a major emphasis, especially at the elementary level. Students were also instructed in how they could download a full text document and e-mail it to themselves at work or home for further use.

In addition to describing what they were already doing with students, respondents were also asked to describe what they planned on doing in the future. Responses focused on providing additional orientations, classes, and materials around four content areas. These included:

- Encouraging students to engage in more research;

- Tutoring students in research skills;

- Providing students instruction around more sophisticated search strategies; and
- Providing students instruction on how to better evaluate the information they find.

Implementation Challenges

Participants were asked to identify the primary challenges they had faced in implementing what they had learned at the OSLIS workshops.

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Participants indicated facing several challenges in implementing what they had learned in the OSLIS workshops. While the challenges were not necessarily different in focus from last year, they did seem to be a bit more intense. Some of the challenges noted included:

- Time to work both collectively and individually with teachers. With a large number of elementary schools participating this year and a number of participants being assigned to several schools or being part-time, the logistics of finding time to meet for collaboration or provide training was a significant challenge for most respondents.

- Insufficient facilities and numbers of computers to effectively provide instruction to teachers and students to take full advantage of the resources offered through OSLIS. Again, many of the schools participating this year were definitely not on the cutting edge technologically in the state. Old, slow, few in number machines were common place.

- Technological "glitches" related to internet connections at schools and the vendor of the online databases. A number of participating schools were not networked until mid-way through the school year, or relied on 56K dial-up modem access to the internet, making efficient and reliable use of the resources problematic. With the first year of the statewide license, the on-line database vendor experienced a number of problems limiting consistent access to the resources. A significant problem was related to schools configuring the databases to their needs and then losing these settings. This was a continuing frustration for many participants.

- Again, with the inclusion of a large number of elementary schools this year, finding materials of an appropriate reading levels was often a challenge, especially at the primary grade levels. While the lexile score was useful, it may not have been used appropriately or consistently across participating schools.

- Resistance to anything new, breaking old habits and overcoming the perceptions of OSLIS being an "additional" thing to cram into an already busy schedule were obstacles to overcome during the year.

Summary of Implementation

This year's participants were by far the most diverse set yet to participate in OSLIS. They were the most diverse in terms of existing technical infrastructure, experience with on-line databases, willingness on the part of classroom teachers to collaborate, sophistication in teaching information literacy skills, and geography.
These follow-up data do indicate that participants did in fact implement strategies and ideas they had acquired in the OSLIS trainings. Participants also indicated, however, that they planned to do more to further implement the goal of infusing the use of information technologies, access to online resources, and instruction around information literacy to increase student achievement. This was the case both in working with teachers and students, and at all levels of schooling - elementary, middle and high school.

The level of implementation was to some extent, however, mediated by both a new and a recurring set of challenges faced over the years in OSLIS. Principal among these again was carving out time from busy teachers schedules to provide inservice and training and collaborate to do instructional planning that takes full advantage of what is offered through OSLIS.

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Some of the other challenges were technical in nature and simply beyond the control of participants. These technological challenges do point up the importance of technology infrastructure, technology support and communication in maintaining consistent access to these resources on a school-wide basis.

This first year in working with the vendor of the statewide database license proved to be an on-going frustration to many. A combination of many factors – individual, school, district, state and vendor related – created situations that took the majority of the year to work out.

In summary, implementation was again uneven across sites and across students and teachers within sites. This has become the expected result, given time constraints on the part of teachers, different levels of receptivity to change, different levels of comfort and skills in using information technology, etc.

Level of Use

One critical aspect of this TLCF project of statewide significance is the use of the online databases accessed through OSLIS. The indictor of success for the project is that:

- Students and staff use the online resources made available through OSLIS.

In the past these statistics have been a direct measure of use in OSLIS schools supported through TLCF or LSTA funds. This year, with the purchase of the statewide license for the on-line database, these statistics instead indicate statewide use. However, prior to mid to late February, use beyond OSLIS schools may have been limited due to lack of awareness of the availability of the resources and lack of training in their use. During February and March OSLIS coordinated a series of statewide training sessions which most likely increased usage statewide.

Summary of Use

Evidence that students and staff are using the on-line data bases offered through OSLIS is provided through EBSCOhost statistics. Usage statistics for were available for those entering through the OSLIS (elementary, middle and high school) profiles. The main user group are those that entered when their IP address was not authenticated such as from home when a userID and password are required. These data do not include those school districts who have worked with EBSCO to create their own profiles (point of entry).

Through June, 2001 students and staff in schools entering the data base through the OSLIS web page accessed these resources nearly 175,000 times. Students and staff conducted nearly 900,000 searches and viewed nearly 600,000 abstracts and accessed over 400,000 full text articles. Students and staff in high schools have made the most extensive use of the databases. January was the most active month of use. Because we do not know specifically who these people were, and do not have access to total usage, it is very difficult to derive any meaning from these data.

SECTION 3.4: Quality of CPD Activities

Three indicators of success were identified in evaluating the quality of the training activities undertaken through the project. These included:

- Training activities are adequate and appropriate.

- Participants are satisfied with the content, format, quality, and likely impact of the training activities.

- Participants will gain valuable and usable knowledge and skills through the training activities.

In judging the success of the project in providing quality training activities two data sources were used, including training evaluation forms and follow-up evaluation.

Appropriateness of Training Activities

The initial professional development sessions held in Umatilla and Eugene during August of 2000 were designed to address the major issues identified by previous OSLIS participants. Ongoing evaluations identified a number of characteristics necessary to adequately and appropriately meet the initial needs of Library Media Specialists. It must be noted that the design of the project purposely included multiple sessions to address developing/emerging needs arising from implementation in school settings. The most effective direct professional development activities for Library Media Specialists had the following characteristics:

- It was clearly based on, and responsive to, the needs of the participants.

- It occurred over time…that is; it was not a one shot event.

- There was opportunity for follow-up professional development after having implemented what was learned in the school.

- It was hands-on in that the professional development activities related to using information technologies occurred using the information technologies.

- It provided lots of examples for participants to adapt and/or adopt to fit their own needs.

- It provided participants opportunities to share frustrations, challenges, and successes in an open and supportive environment.

- It was provided by peers who had credibility and practical job-a-like experiences to share.

- It was focused on "what difference it will make for students."

By implementing what we had learned in previous OSLIS projects and providing additional support materials, the professional development activities were both adequate and appropriate.

Participant Satisfaction

At the end of these sessions, participants were asked to rate (on a 1 - 5 scale, with 5 = "strongly agree" and 1 = "strongly disagree) their satisfaction with: 1) pre-meeting information; 2) the logistics and organization of the session; 3) the accommodations; 4) the level of preparation of presenters and facilitators; 5) the interest and relevancy of ideas and activities; 6) the usefulness of materials; 7) the relevance to their specific needs; and, 8) the overall quality of the session.

When asked to rate their level of satisfaction with the training session:

- 66.7% of the participants felt the **information they received prior** to the session was satisfactory (a rating of 4 or 5).

- 87.2% of the participants felt the session was well **organized** (a rating of 4 or 5).

- 89.4% were satisfied or very satisfied with **logistics and accommodations** for the session (a rating of 4 or 5).

- 92.3% of the participants felt the **presenters were well prepared** for the session (a rating of 4 or 5).

- 89.5% of the participants felt the **ideas and activities** of the session were interesting and relevant (a rating of 4 or 5).

- 89.5% of the participants felt the **examples and handouts** were clear and useful (a rating of 4 or 5).

- 97.4% of the participants felt the sessions were **relevant** to their needs (a rating of 4 or 5).

- 89.5% of the participants felt the session, **overall**, was excellent (a rating of 4 or 5).

Knowledge and Skill Acquisition

To assess the knowledge and skill acquisition that took place at these sessions participants were asked to write down the questions they had in each of the five broad content areas identified through the needs assessment process. Participants were instructed to leave an area blank if they did not have any questions in that area. After the session participants were asked to rate the degree to which their specific questions had been answered. Responses to the question, "Did we answer your question?" could range from "definitely " (5) to "no" (1). Through this process participants generated **169 specific questions** they hoped to find answers to at the training. In this way we were able to identify specific areas of learning that took place without pre-defining the learning that could take place.
Five broad areas of content were presented at the training session: OSLIS and the OSLIS site; EBSCO Resources; World Book Resources; Collaboration; TLCF Activities/Procedures. Of the 169 questions generated by participants, 139 **(82.2%)** were judged to have been completely or mostly answered (i.e., given a 5 or a 4 rating on the question of , "Did we answer your question."

- Of the 169 questions, 42 specific questions were generated in the area of **OSLIS and the OSLIS**
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site. Of these, 38 **(90.5%)** were judged to have been completely or mostly answered.

- Of the 169 questions, 47 specific questions were generated in the area of the **EBSCO Resources**. Of these, 42 **(89.3%)** were judged to have been completely or mostly answered.

- Of the 169 questions, 23 specific questions were generated in the area of **World Book Resources**. Of these, 18 **(79.3%)** were judged to have been completely or mostly answered.

- Of the 169 questions, 34 specific questions were generated in the area of **Collaboration**. Of these, 22 **(64.7%)** were judged to have been completely or mostly answered.

- Of the 169 questions 23 specific **TLCF Activities/Procedures** were generated. Of these, l9 **(82.6%)** were judged to have been completely or mostly answered.

Overall, participants had the vast majority of the questions they came with answered. Very few (4.1%) of participant questions were judged to have gone unanswered during the session.

Follow-up professional development activities took place in October at the fall OEMA Conference held Reynolds High School in Troutdale. Evaluation at this workshop focused on increased levels of confidence by OSLIS participants in: collaborating with teachers; providing students and teachers instruction on the use of information technology and key information literacy skills; and, using online resources. Results of this workshop indicated:

- As was indicated by the evaluation results from the August trainings, **elementary** participants came to the October training feeling somewhat less confident about their participation in the TLCF project than their secondary peers.

- While **elementary** participants generally felt less confident than their secondary peers, they came to the training much more confident in collaborating with teachers than secondary participants.

- **Both groups** felt more confident in all areas after the session than before the session.

- Overall, **secondary** participants left the training feeing more confident than their elementary peers.

- For **elementary** participants, confidence levels went up the most in the area of using the on-line databases.

- For **secondary** participants, confidence levels went up the most in providing inservice to teachers and staff.

- **Overall**, participants came to the session feeling most confident in working with students and least confident in the logistical procedures of the TLCF grant.

- **Overall**, participants left the session feeling most confident in using the on-line databases and least confident in the logistical procedures of the TLCF grant, though much more confident than when they arrived.

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- **Overall** the comfort level of participants increased the most in providing inservice to teachers and staff.

- A general theme running through the comments from **secondary** participants is that they need a bit more time to finalize collaboration plans and they just need to take the plunge.

- A general theme running through the comments from **elementary** participants is that they would still like to see/hear additional specific examples.

- A general theme running throughout **both groups** was the importance and value of time with their mentors.

A large portion of participants were new to using on-line databases and working collaboratively with classroom teaches. As a result, a number indicated that they just needed more time and experience in using the resources offered through OSLIS. Participants this year did identify several areas in which they felt the need for additional training or support throughout the year.

A number of participants felt the need to additional training in and resources for collaborating with classroom teachers. As a group, the majority of participants felt uncomfortable in this role which was new to them. A number of participants also indicated a desire for on-going and additional training in the use of the databases. Several participants also expressed the desire for additional lesson plans for teaching advanced search strategies, such as Boolean searching. Finally, several participants expressed disappointment in the lack of support by their assigned mentor.

These expressed needs point out the relative experience and strengths of this year's participants in contrast to previous participants. While collaboration has always been somewhat foreign to some of the previous participants, this year collaboration was an activity new to many and resisted by teachers in some locations. Additionally, this year's participants were, in many cases, in schools with sub-par technological resources and had no prior experience with the use of on-line databases. As was discussed at the beginning of this report, several of this year's participants had less experience, knowledge and skill in the area of information literacy skills than in the past. Finally, in some cases the role of mentor and the mentor/mentee relationship may not have been well enough defined and supported through the project as was needed. This was not a widespread problem – occurring only in one or two cases – but was significant in those cases in which it occurred.

Summary of CPD Activities

Overall the OSLIS training sessions were largely successful when judged against our evaluative criteria.

- **CPD activities are adequate and appropriate**. The summer and fall sessions were based on both the needs of the TLCF project and the needs of the participants. Three major sessions were held across Oregon to allow all participants convenient participation.

- **Participants are satisfied with the content, format, quality, and likely impact of the CPD activities**. With the exception of pre-meeting information, roughly 90% or more of the participants were very satisfied will all aspects of the sessions, including: organization, logistics and

accommodations, presenters, ideas and activities shared, materials, relevancy, and overall quality.

- **Participants will gain valuable and usable knowledge and skills**. Of the 169 specific questions generated by participants 139 (82.2%) were answered satisfactorily. Less than 5% were judged to have gone unanswered. At follow-up training sessions participants indicated gaining additional knowledge and skills that increased their confidence in carrying out the activities of the project.

Over the course of the year participants were asked to identify additional training needs. While several participants did identify additional training needs (as described above) the majority of participants indicated that they felt they possessed the knowledge and skills needed to carry out collaborative projects and instruct students and teachers.

Based on these results, the first three levels of evaluation for OSLIS training - responds to stated needs, participant satisfaction, and knowledge and skill acquisition – were successful, not withstanding those obvious areas that could have been strengthened.

PART 4. SUMMARY OF RESULTS AND CONCLUSIONS

The 2000-2001 OSLIS TLCF Project of Statewide Significance developed both outcome and process indicators of success. The project was designed to improve student achievement in the content areas, as measured by performance on library research projects and statewide assessments. This was to be accomplished through training and ongoing continued professional development for library media specialists focusing on: 1) collaborating with teachers; 2) providing students and teachers instruction on the use of information technology and key information literacy skills; and, 3) using these technologies and skills in the context of online database resources.

The evidence collected yielded the following results:

- Performance in OSLIS **high schools** on the Oregon statewide assessments continued to be strong, both from an internal-longitudinal and external-comparative standpoint. Performance at the middle school was fairly weak, both from an internal-longitudinal and external-comparative standpoint. Finally, performance at the elementary level (as measured on the 5th grade assessments) was mixed in both cases.

- Small numbers and a lack of a strong and unique school-wide intervention may have had some bearing on the above results, though this does not explain the widely different results found for the elementary, middle and high school levels. Over the past four years of evaluating the OSLIS project, results at the high school level have consistently been the strongest.

- Teachers across all levels of schooling indicated improved student performance on classroom research assignments and projects. Planned collaboration between library media specialists and teachers resulted in the vast majority of teachers indicating that students had greater success in finding more, and more relevant, information to support their projects than in the past. This success, they felt, led to higher levels of success and higher overall levels of quality in student work.

- Planned collaboration between library media specialists and teachers resulted in specific changes in behavior in the areas of using information technology and improved information literacy skills being observed and documented in both students and staff.

- Participants were able to implement what they had learned at the training sessions, though certain recurring challenges were faced and implementation was uneven both across schools and across students and teachers within schools. Chief among these were lack of time, slow and/or old technology, and database "glitches." The online databases were accessed and made use of by students and staff extensively during the year.

- The continued professional development provided through the project was based on identified needs and offered at different times and at different locations across the state. This helped assure that the training activities were appropriate and equally accessible by all participants. For some less experienced participants the breadth and depth of the training was not sufficient to provide them with all of the knowledge and skills they needed to adequately instruct and support teachers and students.

- Participants at training sessions indicated both a high level of satisfaction and a high level of knowledge and skill acquisition related to infusing the use of information technology, access to online databases, and instruction around information literacy skills.

Conclusions

The OSLIS TLCF Project of Statewide Significance plowed new ground this year in two areas. First was the widespread inclusion of elementary schools. Prior to this year OSLIS had piloted programs in 10 elementary schools. Access to and use of information technologies, in conjunction with the development and use of information literacy skills around on-line databases, was tremendously uneven across the elementary schools participating this year. Supporting these diverse participants was a challenge possibly not fully appreciated at the beginning of the year.

Second, for the first time, an on-line database was available to all schools in the state through the support of TLCF funds. The implementation of this resource at the statewide level required more time and effort than expected. Extensive efforts were needed to advertise the availability of these resources. Ongoing technical issues needing to be resolved to allow customization of access at the local level was a drain on all involved. Finally, there was a need to coordinate a massive statewide training effort around EBSCOhost and OSLIS resources. The full impact of these "growing pains" on the overall implementation and outcomes of the project are not fully known, but they were evident.

Significant barriers do exist, and will continue to exist, in achieving the widespread, effective, and efficient use of technology to improve student achievement. Hardware, software, attitudes, time, abilities, and knowledge all continue to be identified as factors inhibiting widespread success in this area. The evaluation of this year's project, as in the past, clearly indicates that a set of necessary conditions must be in place for the use of technology to have widespread and significant impact on teaching and learning.

It may be that the very nature of the intervention - promoting information literacy skills, the use of information technology and on-line databases – is most promising at the high school level. A larger number of the necessary conditions are in place at the high school level than at the middle or elementary school level.

The unique needs of elementary participants and less experienced and able participants may not have been fully anticipated or met. Overall, this group of participants was certainly the most diverse yet and faced challenges in their settings not broadly experienced before by OSLIS. The effects of the "digital divide" may have come into play to a greater extent this year than in past years. Additionally, the energy needed to oversee the statewide implementation of the EBSCOhost database may have diverted energy from supporting all participating schools to the extent needed.

Overall, the design of the project, as proposed, seemed to be adequate to ensure success in participating schools, especially high schools and schools with more experienced and able Library Media Specialists. Collaboration between library media specialists and teachers to design meaningful learning activities that make use of information technologies and information literacy skills would, based on all available information, appear to be one avenue to achieving the outcomes of the TLCF Program.