

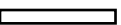
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Thinking beyond the Disjunctive Opposition of Information Literacy Assessment in Theory and Practice

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1997; Kinder 1995; Lewis 1990; Pickard 1993; Bishop 1996; Stoddard 1991; McCarthy 1997). Thus, many SLMSs are experiencing a disjunctive opposition or profound conflict between information literacy assessment in theory and as practiced (Jones 1997; Person 1993; Pickard 1993); in fact, SLMSs are practicing the roles of instructional, assessment, and curricular leader or partner less often than any other role articulated in national guidelines (McCracken 2001). Recent library literature has illuminated the existence of assessment system impediments (for example, lack of time, role perception conflict, lack of teacher interest in cooperation, and too many students to serve) to the practice of information literacy assessment that restricts many



and Brown 1992; Jackson 1993). The intensified courtship between school library media centers

1993; Paulson, Paulson, and Meyer 1991). Callison (1993) stated that school librarians naturally understand the characteristics of portfolio assessment because school librarians are increasingly practicing some aspect of activity documentation in respect to the library collection and the curriculum. He encouraged school librarians to move beyond the use of records collection for showing the value of the school library towards the use of portfolios as a method for student assessment.

Performance-based assessments are exercises that ask students to demonstrate their knowledge and skills by undertaking some type of performance (Rothman 1996). They provide a basis for teachers to evaluate both the effectiveness of the process or procedure used and the product resulting from performance of a task. These types of assessment usually require the student to demonstrate skills in a real-world environment or to complete a project by assuming the role of a real-life professional. These assessments according to some are beneficial because they provide real incentives, drive instruction and learning in positive ways, and focus learning on higher order or complex thinking skills (Madaus and Tan 1993; NCEST 1992).

Successful Implementation of Alternative Assessments

The successful implementation of alternative assessments requires the student to be able to demonstrate the skills and knowledge that are being assessed. This can be achieved through a variety of methods, including portfolios, performance-based assessments, and self-assessments. The key to successful implementation is to ensure that the assessment is aligned with the learning objectives and that it is fair and valid.

(McCracken 2001) that attempted to determine if practicing SLMSs perceive that they had been able to implement their roles as described in *Information Power* (1998), elicited such comments as “I wish I had the time to be the person your form reflects” and “Can anyone do everything on your form?” McCracken (2001) also identified several deterrents to the instructional and curricular role with time being the primary deterrent. The findings of the McCracken (2001) study support previous research that identified time as a major structural impediment to the instructional and assessment roles of SLMSs (e.g., Fedora 1993; Stoddard 1991; Ervin 1989; McCarthy 1997).

Research also shows that school administrators and teachers are putting into operation their misperception of the librarian’s role upon the SLMS through the creation of professional kinds (Dorrell and Lawson 1995; Ceperley 1991). In accordance with Hacking’s (1996) use of the term *human kind*, the term *professional kind* is used to emphasize a system of classification which attempts to identify a kind of library professional and their behaviors, conditions, tendencies, temperaments, and roles. The system of classification that administrators and teachers are currently using emerges from the school librarian’s traditional roles (Lai 1995). This system of classification has created misperceptions of the SLMS’s role and traditional expectations that are impeding role possibilities (Naylor and Jenkins 1988; Ervin 1989). These role restrictions are

Summary

The field of school librarianship has made a broad move from the dominance of testing to that of alternative assessment. The theoretical and epistemological substratum for this shift was constructed by the professional literature and such seminal guidelines as *Information Power: Building Partnerships for Learning* (1998). Successful implementation of alternative assessment in school library media centers is dependant on the librarian-constructed environment and on assessment system constraints to the instructional/assessment role. The field has historically focused on the librarian-constructed learning environment, rendering assessment system constraints as secondary. Although much of the research literature does not directly address the assessment role of the SLMS, it is a role that is embedded within the instructional and curricular roles of the SLMS, and when these roles are impeded, so too is assessment. The literature has illuminated four major impediments to the SLMS's attempt to assess student learning. First, many SLMSs do not have time to fulfill an instructional/assessment role; therefore, they cannot assess students on a consistent basis. Second, teachers are situating SLMSs on the periphery of teaching, learning, and assessment, thus obstructing the full implementation of an assessment role by SLMSs. Third, school administrators and teachers are implementing their misperception of the librarian's role upon the SLMS and impeding role possibilities. Fourth, the number of students served by school library media centers coupled with inadequate staffing makes

obtain data on the librarian-constructed teaching and assessment environment, collaborative teaching and assessment environment, and system factors impeding the instructional/assessment role of the SLMS. The observation process included the unobtrusive recording of the librarian, teachers, and students' behaviors and interactions in respect to the particular focus of study. Observational data was recorded using field notes.

Interviews were used to obtain insights on the SLMS's philosophical and practical perspective of teaching and assessment, the library's culture, routine independent and interdependent teaching and evaluative activities, students' perspectives of learning and assessment, ideal assessment vision, and system deterrents to assessing information literacy. The researcher also interviewed teachers to obtain insights on teaching and assessing information literacy, students' perspectives of teaching and assessment, and their perceived role of the librarian in respect to instruction and assessment. All interviews were semi-structured, which allowed for further questioning based on participants responses. All interviews (with one exception) were audio recorded.

Document analysis or data gathering through the collection of existing documents was also employed during the rapid design ethnography. The researcher collected any documents such as activities used during teaching, lesson plans, student final projects, school newsletters, and tests that would provide insight into the problem studied.

Selection of Site and Participants

This study attempts to use technology as an instrument that could potentially aid in the fulfillment of the instructional/assessment role impeded by system disturbances in many school library media centers. Thus, technology is the basis for the study's selection frame. The school district chosen for this study has a very innovative Internet program housed within eleven of its middle school media centers and computer labs. The researcher used the Internet program as a primary selection tool because it was assumed that any media center with the technological foundations and staff training to house an innovative Internet program for a number of years should have the foundation to implement and maintain an innovative assessment instrument. As stated above, eleven school media centers (all situated in middle schools) are presently

eight-grade history, seventh-grade science, and seventh-grade social studies. The researcher also observed five classes (in the library setting) throughout their completion of classroom projects that utilized the library.

Description of Site

East media center operates within a middle school located in a small Midwestern city. The mission of the media center parallels that of the school, which is to educate all students with the knowledge, skills, and confidence required to participate in a global society. The fulfillment of this mission, to educate for participation in a global society, is based primarily on two guiding principles: (1) thematic, integrated, and multicultural curricula; and (2) technology integrated throughout the curriculum. The school is one of the district's technology showcase schools. It has a student-to-computer ratio of four to one due to its two computer labs, a mobile laptop lab, the library's computer center, and fully networked classroom computers. The school actively attempts to ensure that educators are using the technology across the curriculum to meet the school's mission, instead, of only using the technology for planning and documentation.

The school library media center has one part-time SLMS and one part-time library aide. The SLMS has a master's degree in library studies and more than ten years of experience, and this is the aide's first year working in a library setting. In an effort to keep the school library media center open five days per week, the SLMS and the aide alternates days. Thus, the specialist and the aide are not usually present at the same time. The media center serves 240 students with 78 percent of the student body being culturally and racially diverse. The library also serves the most racially and culturally diverse teaching staff in the district.

Data Analysis

Following a perspective from cultural-historical AT, the researcher focused on the analysis of assessment system disturbances identified in the transcriptions and the field notes. A primary objective in an analysis employing an activity system perspective is to describe the activity system elements (i.e., subject, object, mediating artifacts, rules, community, labor division, and outcome) and relationships, and to interrogate the disturbances within or between the elements (Collins, Shukla, and Redmiles 2002). In this ethnography, analysis included an interrogation of the assessment system disturbances and their insights

According to the activity system model, there are specific primary elements in an expanded activity system (i.e., subject, object, outcome, rules, community, division of labor, and mediating artifacts). According to Engestrom's model, these are the characteristics of East's information skills assessment system.

Object

The *object* of the assessment system is to ensure that each student meets the information literacy standards of the district by eighth grade.

Outcomes

All activity systems attempt to transform objects into outcomes. The assessment system under study is motivated to transform its object into the outcomes listed in table 1.

Table 1. Assessment System Outcomes (Sketch School District 1998)

Access Procedures	<ol style="list-style-type: none"> 1. Searches for materials by author, title, subject, and keyword. 2. Differentiates between networking and stand-alone computer uses. 3. Uses electronic databases to access newspapers and magazines. 4. Uses community resources for information. 5. Uses search engines to locate information on the Internet. 6. Uses general reference tools in print and electronic format. 7. Uses the Dewey Decimal Classification System to locate materials by call number.
Access Concepts	<ol style="list-style-type: none"> 1. Knows that materials may be borrowed from other Sketch schools and the public library. 2.

9. Records sources of information in a standard bibliographic format.

Research Concepts

1. Knows the difference between primary and secondary sources.
2. Knows that information sources reflect varying degrees of accuracy.
3. Knows that information sources reflect diverse viewpoints.

Communication Procedures

1. Constructs a bibliography in standard bibliographic format.
2. Creates presentations using video, audio, hypermedia, or other electronic resources.

Communication Concepts

1. Knows that worldwide communication can occur electronically through electronic discussion lists, e-mail, and bulletin boards.
2. Knows that communication must have a purpose—to inform, persuade, or entertain.

Evaluation Procedures

1. Identifies materials which illustrate bias or stereotypes.
2. Relates literature to real life or other literature.

Selection and Evaluation Concepts

1. Knows that diverse racial and cultural groups and both genders have contributed to our literary heritage.
2. Knows the principle of intellectual freedom.

Subjects

The SLMS and teachers are the primary subjects in this assessment system. They are predominantly responsible for information learning and assessment.

Community

The assessment system is theoretically a collective activity that transforms teachers and the SLMS into a community of agents working towards a shared object. Within the system, the SLMS and teachers should collaborate in the teaching and assessment of information skills during an introductory technology course, curriculum-based classroom projects, and during library-based projects.

Mediating Artifacts

4. Manage and facilitate the learning environment, creating a positive atmosphere conducive for maximum learning.
5. Collaboratively plan experiences to teach and assess student achievement of information concepts and processes.
6. Be familiar with the strengths and weaknesses of different instructional and assessment approaches.
7. Provide content area support to media specialists developing library programming to teach and assess information skills.

Tools

Within this system of assessment, subjects theoretically use assessment tools to ensure that each student meets the information literacy standards. According to the school's own primary documents, the information literacy assessment tools should be collections of students' work that illuminates their efforts, abilities, processes, and understandings or exercises that ask students to demonstrate their knowledge and skills.

Assessment System Disturbance Themes

This section focuses on the expanded information literacy assessment system disturbances identified in this study. Articulated in this section are the disturbance themes between activity system elements that emerged from the rapid design ethnography.

Disturbance Themes between Expanded Assessment System Elements

Theme 1: Subjects versus Object

The *object* of the assessment system is to ensure that each student meets the information literacy standards of the district by eighth grade. The study identifies three disturbances between teachers and the object. The first disturbance presents itself as a misconception of information literacy by teachers. Teachers consistently conceptualized information literacy or librashemation 11m6eenrmationisse co4(n a3(ba)4(n)-10pl l-ectnception of information literacy by identifiement sy12(s)1(te)6(m(sse)5(co4(nt)-2(fs)-9(y)22)2(s)-9(y12(s)1(te)6(m6(s)1()1(he)44b6(i)-6i)24nf) l

it's size and what it offers. Here it is pretty easy to say, here are the magazines, here are the encyclopedias. . . . And we just sort of figure out on the fly what they know and what they don't know. They don't have like a pretest on how to use information. In my experience, the kids know how to use the library. They are pretty good at it.

The second disturbance emerged as a dissonance of objects. The object of ensuring that each student meets the standards of the core content areas overshadows the object of ensuring information literacy. Instead of becoming a duality of object, ensuring that students are information literate are, at most, afterthoughts during the curriculum-based classroom projects, as articulated in statement such as:

We don't really do a lot of research. The thing is that it takes so much time to do research, and I have so much material to cover", and statement from the media specialist such as, "the teacher usually has his agenda or her agenda when coming into the library.

The third disturbance is ambivalence toward the object. Teachers often articulated opposing attitudes toward assessing information literacy. They acknowledged that the district had information literacy standards, but they were uncertain about the need of the object. They illustrated ambivalence in the following types of comments:

No, we don't have a way of assessing information skills, but by now I think that students would know how to use the library. Um, if a student needs help during some type of activity then they could always ask for help. But, no. We don't have a way of knowing what every student knows.

And

I think that a lot of these resource books here in the middle along with the encyclopedias, atlases, and like resource books about presidents and animals, kids might be poorer at using those to get their information, and are more likely to go to the card catalog and then find books that tie into the topic that they are looking for, but the information that they are looking for is going to require them to really scan through the book and glean a very small amount of information. It makes it more difficult then if they would know how to use the larger resource books. . . . They don't have like a pretest on how to use information. In my experience, the kids know how to use the library. They are pretty good at it.

Theme 2: Subjects versus Division of Labor

The system also experienced disturbances between subjects and their perceptions of labor division. Theoretically, the librarian's role is to "work with teachers to plan, conduct, and evaluate learning activities that incorporate information literacy" (AASL/AECT 1998, 50). However, teachers predominantly did not see the role of the librarian as partner in the teaching and assessing of information literacy. Teachers related their feelings about the teaching and assessment roles of librarians in comments that included the following:

Well, we can handle the teaching. The librarian should focus on collecting materials and scheduling. I have all of the resource that I need, but more images would be nice. And, if I could get my resources in electronic form, then that would be great.

And

I would prefer the latter [a resource provider role] with an emphasis being on organization. With this grant and the equipment being brought in, knowing where it is and being very responsible for keeping its way about the known schedule of when the library would be available and being very firm in following up on that schedule and not letting people just come in randomly. And, it would not be a bad idea, early on in the year, for the librarian to require each class so that all students are down here for a day or through the course of a week to give a tutorial on how to use it and to explain some really simple things like checking out and renewing books and what's expected as far as checking out and renewing books if you are using the computers. Where the fiction and non-fiction is and how it is organized, that would be handy.

In respect to the perceptions of the librarian's role during the labor division in assessing and teaching information literacy, the SLMS stated:

I am not satisfied with what goes on here in regard to that. I really feel, and again I think it is communication you know, realizing what is the role of the librarian. Do teacher's understand that, no, I think often they think that the role of the librarian is to order books, check books in and out, keep up the library, to help when classes come in, teach some research skills. But, beyond that I don't think that they see it as a full partnership, which it should be. We all are here to teach these kids and help them to grow and learn, and really there should not be any borders between us, and um, the reality is of course your busy ordering books and cleaning up and doing all the things you need to do to maintain the library. However, I think a really good librarian should look at it as a partnership with the teacher, and a really good teacher should look at the librarian as a partner.

She continued in saying,

I also think that the school of education needs to collaborate more with the school of library science because I don't think teachers understand what librarians are doing. Because I have taught, I have an understanding of what they are doing.

Theme 3: Assessment Tools versus Object

Within this system of assessment, the information literacy assessment tools should be ongoing, integrated parts of class projects. These tools may be collections of students' work that illuminates their efforts, abilities, progresses, and understandings or exercises that ask students to demonstrate their knowledge and skills. The assessment tools present two major disturbances to a system attempting to ensure that each student meets the information literacy standards of the district. The first is an unreliability of assessment across teachers with misconceptions of information literacy, core content area accountability, and ambivalence toward the object. The misconceptions, core-content focuses, and ambivalence make the rating of information efforts, abilities, progresses, understandings, and use an uncontrollable variable. The second is the time-

consuming nature of collecting students' work that illuminates their efforts, abilities, progresses, understandings, and use, or conducting exercises that ask students to demonstrate their knowledge and skills. These collections (e.g., portfolios) and demonstrations require a significant amount of time to develop learning outcomes and rating criteria and to allow students to collect

Theme 5: Subject versus Community

The school theoretically employs an expanded assessment system composed of seven primary elements (subject, object, outcome, rules, community, division of labor, and mediating artifacts). The expanded system theoretically transforms teachers and the SLMS into a community of agents working towards a shared object. However, in practice the disturbances present within the assessment system transforms it into a closed system composed of only four elements (subject, assessment tools, object, and outcome) in which the SLMS is the primary subject working towards the object. Within this qualified system of assessment, there are also disturbance themes.

The first disturbance theme emerges between the *subject* and *object*. The object of the assessment system is to ensure that each student meets the information literacy standards of the district by eighth grade, but the SLMS is the only information professional on site serving a student population of 240 students. Therefore, the assurance that each student is information literate is complicated, and when coupled with: (1) teacher misconceptions of information literacy and the librarian's role, (2) dissonance of objects, (3) ambivalence toward the object, (4) time-consuming nature of class projects, and (5) the library location, the disturbance magnifies.

The second disturbance theme emerges between the *subject* and *tools*. The subject employs two major tools in assessing information literacy—personal contact and authentic projects. During the three months of observations, the researcher recorded the SLMS's use of personal contact during five class projects that utilized the library. Personal contact, if used effectively can provide valuable information about student learning. Effective use required the SLMS to observe and evaluate the progress of students to identify needs. During the interview, the SLMS said:

because the teachers will come here and all of the sudden they decide that they are going to do a project, and so they will come into the library to do it, and I will walk around to see how the kids are doing and I will help them on an individual basis if I see that they are in need . . . basically, identifying their needs, it is up to me to walk out, which I do when they're working and then check on them. They have a very comfortable

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different technologies (inscribed within a virtual reality platform), information literacy concepts, and learning and assessment strategies to address an assessment system's disturbances and to complement its pedagogical cultural contours. This section briefly explores design aspects of VILLAS, the system disturbances that they address, and its potential to transform the assessment system by moving beyond the disjunctive opposition of student assessment in theory and as practiced.

Figure 2. Virtual Reality Information Literacy Learning and Assessment Space (VILLAS)

Design Aspect 1: Authentic Problem-based Assessment

The design of VILLAS is founded upon the idea of authentic problem-based assessment, which is the practical application or demonstration of skills and knowledge in a real-world context to solve problems. The real-world context is designed into the platform using virtual reality and authentic performance-based tasks. VR allowed the researcher to create 3-D interactive information environments (including 3-D libraries, homes, museums, books, computers, televisions, and people) that appear real. Within these virtual information environments, students can move and interact freely and collaborate with each other using avatars (virtual representations of themselves), chat features, and gestures. The realistic contexts make problems

This aspect also frees time for the librarian to fulfill other responsibilities. It does this because the librarian has several ways to assess in respect to time and space. The assessment can take place: (1) in the library with the librarian circulating and assessing demonstrations physically; (2) in the classroom with the librarian assessing demonstrations via an avatar; or (3) during a periodic examination of the collections of students' work, that illuminates their efforts, abilities, progresses, and understandings.

Aspect 4: Triangulation of Rating

Rating triangulation is a design aspect of VILLAS that directly addresses the unreliability of assessment across teachers with misconceptions of information literacy, core content focuses, and ambivalence toward the information literacy object, which makes the rating of information efforts, abilities, progresses, understandings, and use an uncontrollable variable. The triangulation elicits multiple perspectives (teacher, student, and SLMS's) on the student's achievement of a set of characteristics or qualities evaluated. The rating scale, a combination of numerical, graphic, and descriptive graphic scales, is used to assess learning outcomes and student development. A numerical rating scale is simply a scale that raters use to indicate the degree to which a characteristic is achieved by marking a number. Graphic rating scales indicate degree of characteristic achievement along a horizontal continuum, and descriptive graphic rating scales use descriptive phrases to identify degree of characteristic achievement along a horizontal a graphic scale. The rating scales are used to assess a variety of information literacy learning outcomes and aspects of student development. They are also designed to assess processes, procedures, and products.

Many VILLAS tasks require students to demonstrate achievement through their performances. The rating scales bring reliability to the assessment of information literacy demonstrations across classrooms by assessing the same aspects of performance in all students on a common scale. Many of the performances results in some type of product, and the raters can assess the product as well as the process and procedure. The rating scale serves the same purpose in product assessment that it does in process assessment. It helps raters assess the products of all students in terms of the same characteristics.

Conclusion

The rapid design ethnography 5(-)uur134(pi)-2(d de)4(s)-1(i3I)19(t)-6

(e.g., VR), information literacy concepts, and learning and assessment strategies to address an assessment system's disturbances and to complement its pedagogical cultural contours. The mediating artifact, VILLAS, is an authentic problem-based assessment that brings balance to the dissonance of core content and information objects, and frees the librarian from the marginalized teaching and assessment position created by role misconception and unwillingness of teacher collaboration. It is the virtual counterpart of our *information as space* reality, which addresses teacher's misconceptions of information literacy assessment as the location of information within a particular library, and it addresses the librarian's concerns of skill transference across information environments. The artifact attempts to control time and space to increase the degree of existence for the librarian's teaching and assessment role, and it employs rating triangulation to directly address the unreliability of assessment across classrooms. These system specific design aspects have the potential to transform the assessment system by moving information educators beyond the disjunctive opposition between student assessment in theory and as practiced.

By focusing on one bounded assessment system, the researcher allowed himself the opportunity to examine the system in-depth from various angles to get a rich, meaningful, and complete understanding of the particular complex system under investigation. This study was not concerned with the typicality of the site or system because the general purpose was to understand this particular system's disturbances and to implement a process that could potentially produce a technology-based mediating artifact to transform the system. However, due to the consistencies between this particular system's disturbances and those illuminated in school library literature, qualified inferences and applications of this mediating artifact maybe made or applied in similar assessment systems.

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