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*Article*

**The Balanced Scorecard: A Systemic Model for Evaluation and Assessment of Learning Outcomes?**

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**Abstract**

**Objective** – The goal of this paper is to explore using Kaplan and Norton’s balanced scorecard methodology as a systemic model for outcomes assessment. The expectations of academic accrediting agencies have shifted from measurement of inputs and outputs to that of the library’s impact on learning and demonstrating accountability. Recent literature has presented methods for performing specific aspects of outcomes assessment. However, the scorecard methodology may provide a systemic advantage beneficial to library administrators and managers.

**Methods** – This paper provides a selective review of outcomes assessment in academic libraries and a description of the balanced scorecard methodology, focusing on its relevance to assessment and demonstration of accountability.

**Results** – A theoretical scenario is outlined, including examples of a scorecard used for outcomes assessment. For each example, the benefits of using a systemic approach are examined.

**Conclusions** – Using a systems-thinking approach to outcomes assessment may provide significant advantages to library administrators and managers. As the model includes traditional methods of outcomes assessment, the scorecard approach adds elements of process improvement, identification of the inputs and outputs that create outcomes, and a tool for communicating accountability for resources.

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## Introduction

Each year, academic libraries employ librarians to teach students research skills, to purchase materials and license databases, and to create and maintain the technological and physical infrastructure which provides access to their resources. Statistics show the number of students attending instructional sessions, using the catalog and library resources, or how many are entering the building, but none of these measure how the students' research skills have improved. The Association of College and Research Libraries (ACRL) Task Force on Academic Library Outcomes Assessment Report (1998) defined outcomes as "the ways in which library users are changed as a result of their contact with the library's resources and programs" (Section II, para. 2). How do we know if the library's human and financial resources are actually contributing to student learning outcomes? How do library managers know, with any precision, which factors actually influence student learning? How does the library demonstrate their impact on learning to accrediting agencies and campus administrators?

In the conclusion to Dugan and Herson's "Outcomes Assessment: Not Synonymous with Inputs and Outputs" (2002) they write, ...the profession needs to develop knowledge, measures, and data-collection techniques that cut across perspectives. The result is a more complete view of a "jig-saw" puzzle entitled "the library as a partner and contribution to achievement of the institutional mission." (p. 380).

To extend this metaphor, a holistic, systems approach can view the entirety of the assessment puzzle rather than a specific piece of the puzzle. Such a technique can be found in Kaplan and Norton's Balanced Scorecard technique, first outlined in "The Balanced Scorecard: Measures that Drive Success" (1992), which can be used for identifying the cause and effect relationships between inputs (budget allocations, training, personnel), outputs (projects, instructional sessions), and the performance drivers that have an impact

on learning outcomes. The balanced scorecard process can help administrators make data-driven decisions regarding how to allocate resources and structure programs to create learning outcomes. This paper will provide a theoretical scenario of a balanced scorecard used to structure an academic library's information literacy program with the goals of creating and measuring learning outcomes.

## Literature Review

This paper is concerned with two areas of research: the balanced scorecard and learning outcomes assessment. As background, this paper will first provide a brief review of the balanced scorecard, then examine the use of the balanced scorecard in academic libraries, and finally, provide an overview of the current assessment environment in academic librarianship.

The balanced scorecard was developed through David Kaplan and Robert Norton's (1992) research into corporations' primary reliance on financial data as a measure of success, and that financial measures indicate past success, but do not assist in predicting future success (pp. 71-79). The common metaphor is that using financial measures to steer a corporation is like driving by looking through the rear view mirror.

Kaplan and Norton created a "scorecard" system based on evaluating the organization's performance in four perspectives: Financial, Customer, Internal Business Processes, and Learning and Growth. Measuring the organization in this manner provides a "balanced" view, rather than the traditional financial summary. The balanced scorecard also calls for a balance between types of measures, and creating a scorecard entails identifying the cause and effect relationships between inputs, outputs, and outcomes.

Kaplan and Norton (1996) place great emphasis on identifying performance drivers, also called lead indicators, which are the inputs and outputs that have the effect of driving an organization towards its strategic

goals; i.e., performance drivers create outcomes (pp. 31-32). The balanced scorecard literature generally includes user satisfaction as an outcome. While the ACRL Task Force Report (1998) agrees that satisfaction is an outcome, it downplays the importance of satisfaction as “a facile outcome...too unrelated to more substantial outcomes that hew more closely to the missions of the libraries and the institutions they serve” (Section II, para. 2). In this paper’s application of the scorecard to learning outcomes, satisfaction measures are included, but reinforced by complementary outcome measures.

The balanced scorecard’s four perspectives give managers a holistic view of a complex organization, allowing them to see the interactions and interdependencies of the component parts and how they contribute to the whole. Like any system, the scorecard provides a closed-loop cycle of creating objectives and measures, implementing them, gathering and analyzing data, and then refining (and perhaps discarding and replacing) the objectives and measures.

Originally designed for the corporate sector, Kaplan and Norton have cited Calabro (2001) that half of all US Fortune 500 companies use the balanced scorecard, as do 40-45 percent of European Fortune 500 companies (para. 9). A key element of the scorecard’s appeal to corporate executives and non-profit/government administrators is its utility in clearly communicating an organization’s accountability. Administrators in the governmental and non-profit sectors such as the American Institute of Certified Public Accountants (United States), the Society of Certified Management Accountants (Canada), recommended the technique after the passing of the 2002 Sarbanes-Oxley Act (SOX), citing the scorecard’s utility for demonstrating accountability. SOX is a legislative reaction to the accounting scandals concerning Enron, Adelphia, and others, the goals of which are to improve corporate accounting controls, increase regulations, and restore consumer confidence (Niven, 2003; Office of Economic

Analysis, United States Securities and Exchange Commission, 2002).

Adopters of the balanced scorecard in academic libraries have implemented Kaplan and Norton’s process differently, experimenting with how it could be used. Lloyd (2006) outlined the scorecard’s applicability to academic libraries and summarized the process for creating a scorecard. Lloyd identified several critical success factors in implementing a scorecard, including establishing a clear mission; ensuring strong leadership support, selecting the correct measurements, communicating the performance results to constituencies, strategically motivating staff, and making evidence based decisions based on scorecard results.

Poll (2000) aimed to “establish an integrated controlling system and to collect and evaluate performance as well as cost data for management decisions” (p. 709). Poll focused on standardized data sets, such as ISO/DIS 2789 and ISO 11620 that would allow libraries to benchmark their scorecards. Self (2003) implemented a scorecard at the University of Virginia Library with the goals of gaining control of their data-collection efforts, setting measurable goals, and for the “intelligibility” of the methodology (para.6). Kettunen (2009) used the scorecard concept as a framework for evaluating the strategic plans for twenty-nine Finnish libraries, though not for the actual creation of the libraries’ strategic plans. Gerrits and Pienaar (2000) utilized the scorecard as a tool for managing organizational renewal. Hernon and Dugan’s “An Action Plan for Assessment in Your Library” (2002) discussed the scorecard as a tool for process improvement (p. 68).

In the last quarter century, higher education accreditation has moved towards measuring institutional quality in terms of learning outcomes. The ACRL Task Force (1998) stated that “the association has no statement on outcomes assessment, and that its standards, largely written as output measures, are out of step with the practices and philosophy of

regional and accrediting agencies and state higher education agencies" (Section I, para. 2). Ten years later, academic libraries still seek improved means of communicating the impact of their work, and are at risk if they are not able to substantiate the impact of their resources on the individual users. Indeed, in Lakos's (2007) interviews with library directors, he found that "some directors identified interest from their campus administrators in impact data related to learning outcomes but acknowledged that the library is not yet viewed as central to these outcomes" (p. 445).

The 1998 Task Force made recommendations to the ACRL Board:

1. Policy: ...the ACRL Board adopt an explicit policy of endorsing the development and use of outcomes assessment among academic libraries.
2. Accreditation: ...ACRL foster continued cooperation with the regional and specialized accrediting agencies. (Section V)

Despite the recommendations of the ACRL Task Force, libraries continue to largely rely on input and output measures. The ACRL Task Force states, "...the purpose of all inputs...is to achieve *outcomes*" (Section II, para. 6). Inputs may identify the resources that create outcomes, and outputs may illustrate the use of resources which are used in creating outcomes, but neither is effective in actually measuring learning outcomes. Librarians should continue to collect the standard input/output data for various purposes, such as ongoing longitudinal studies and surveys, but must be more effective in illustrating the correlation between inputs and how they manifest in useful outputs and outcomes.

In the United States, the prominent professional library organizations have pursued very different avenues of research in assessment. Whereas the ACRL Task Force focused on assessment of learning outcomes for the purposes of accreditation, the ARL New Measures Initiatives do not address student outcomes, learning outcomes, or

connect any of the Measures to accreditation. Rather, ARL's StatsQUAL program includes LibQual+, which focuses on user satisfaction; ARL Statistics, which collects data on the input and output measures of the member libraries; E-Metrics, measuring electronic resources, and ClimateQUAL, which measures organizational climate and diversity.

### Aims

Dugan and Herson (2002) identified the relationship between evaluation and assessment:

Outcomes assessment measures the contributions that the library makes to the institution's educational mission as a whole. Evaluating the process of conducting assessment on student learning outcomes is designed to improve library services through the application of the feedback loop within a typical systems planning model. It is intended to identify areas in which the library could improve the methodologies deployed as the means to affecting learning changes in the individual. (p. 378)

Using a theoretical scenario, this article will propose an approach using the balanced scorecard that helps library administrators identify the inputs (financial and human resources) that impact learning outcomes, establish a system for improving the instructional process, and provide a tool to communicate the value that the library contributes towards the institution's learning goals. Those interested in evidence based practice in librarianship should find the balanced scorecard relevant for its focus on gathering and using data to produce desired outcomes. This paper will illustrate how the scorecard facilitates data-driven evaluation of the learning process, leading to improving the learning outcomes of users of academic libraries.

This article will rely on the definitions of outcomes, inputs, outputs and standards as defined in the ACRL Task Force Report (2002):

Outcomes: the ways in which library users are changed as a result of their contact with the library's resources and programs.

Inputs: the raw materials of a library program- the money, space, collection, equipment, and staff out of which a program can arise.

Outputs: quantify work done, ie: number of books circulated, number of reference questions answered. (Section II)

### Components of a Balanced Scorecard

A brief description of the components of scorecard will be useful in understanding the scorecard methodology. Objectives and metrics are created for each of the four perspectives of the balanced scorecard: Financial, Internal Business Processes, Learning and Growth, and the Customer. Essentially, the goal is to identify those measurable elements, which when improved upon, advance objectives. As an example, consider training for a marathon and the training regimens published in runners' literature: in the 1st week, one runs an average of 5 miles a few days a week. By the 8th week, one is averaging 12 miles, and by the 13th one is running 26 miles. The regimen increases weekly distance, and types of training sessions, until one is theoretically prepared to run a marathon. In this example:

- *Strategy statement*: the strategic purpose – to complete a marathon
- *Objective*: a specific action plan – engage in a daily training program in order to compete in this year's New York Marathon
- *Initiatives*: the projects, tasks, and ongoing work undertaken to achieve the objective – the daily running regimen
- *Input measures*: resources devoted to initiatives: time, money (running shoes, etc), and energy put into training
- *Output/lag measure*: the tangible results of input resources – miles run

- *Lead indicator*: an indicator that signals future success – achieving weekly “miles run” targets increases the possibility of completing a marathon
- *Outcome measure*: the resulting change in an individual due to the impact of inputs – one's ability to run great distances; compete in a marathon; increased cardiovascular health

It is a simple metaphor, but illustrative of the subtle differences between types of measures as well as how the same metric is used for different purposes. Measured alone, “miles run” is a simple output of specific inputs: time, money, energy allocated to running. In the context of the strategy statement “I want to complete a marathon,” the “miles run” metric becomes a lead indicator of potential marathon completion; achieving the metric targets are mileposts by which the potential for future success may be measured.

Scorecards created for the for-profit sector are structured so that all the objectives are linked in cause and effect relationships with the goal of improving finances. In assessing student learning, the focus is instead on the Customer perspective (Niven, 2003). Creating a balanced scorecard for student learning outcomes is a matter of framing hypotheses which are proven, over time, by observation of the correlation of inputs, outputs, and whether or not they are resulting in the desired outcomes.

A “strategy map” is a visual representation of the hypothesized cause and effect relationships between performance objectives of a balanced scorecard. The function of the map is to provide “the missing link between strategy formulation and strategy execution” (Kaplan & Norton, 2004, p. 10). A good map clarifies exactly what needs to happen, in a logical order, to achieve outcomes. It visually tells a story about how the library creates value for the library user. Funding, in the Financial Perspective, translates into an ability to provide training and educational opportunities for staff (the Learning and Growth Perspective). An adequately trained staff can perform higher-level services, utilize

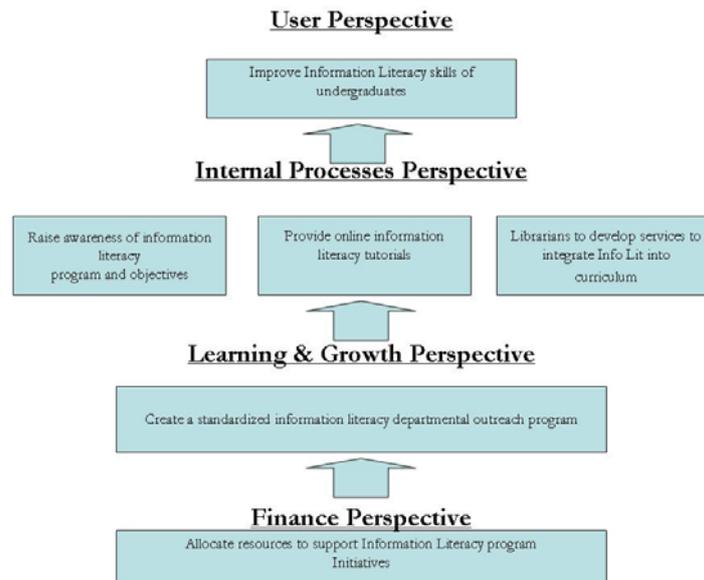


Fig. 1. Strategy Map

new skills, and instruct users to a greater degree (the Internal Business Process Perspective). These three perspectives describe the logical cause and effect progression of adding value to services, and produce learning outcomes (the Customer Perspective). Figure 1 provides a strategy map which illustrates the cause and effect between the scorecard's four perspectives for a scenario which relates to an academic library's information literacy program. This scenario is discussed throughout the remainder of the paper.

### A Theoretical Scenario of Using the Scorecard as a System for Outcomes Assessment and Evaluation

The following expository section describes a theoretical scorecard designed to systemically assess the learning outcomes of an academic library's information literacy program. The scenario is a combination of commonly-accepted practices presented together for the purpose of illustration. In reality, such a transition is not a simple process and would indeed require a full scale project cycle of planning, implementation, and revision. Additionally, creating and implementing an information literacy program implies a significant degree of organizational change.

This article will not address issues of organizational change and development in implementing an information literacy program.

The scenario is as follows: a large university library must respond to the requirements of administration to quantify how the library supports university strategic priorities. Campus administration and faculty have recently voted upon and adopted a set of undergraduate campus-wide learning outcomes, one of which is information literacy. The librarians feel that there is a strong alignment between the information literacy outcomes of their instructional program, the campus-wide learning outcome requirement, and the university's strategic priority to "improve undergraduate learning and retention."

A task force is charged to review the research on the current information literacy literature, techniques, and tools and to create a proposal for an information literacy program. Hypothesizing that a student who is information literate will be better prepared to succeed and earn a degree, the team determines that improving the library's information literacy program is the best way to meaningfully contribute to the university's strategic priority. The team decides to use the

balanced scorecard as a management system for evaluating and assessing the program, and adopts the university priority to “improve undergraduate learning and retention” as their scorecard’s strategy statement.

#### *Customer Perspective*

With a ratio of 1400 students per instructional librarian, an essential characteristic of the program must be scalability. With this in mind, the committee focuses on creating an instructional program with two initiatives:

- 1) The instructional librarians will focus on a departmental outreach program with the goal of building on existing library/departmental liaison relationships, wherein the librarians will work with course instructors to integrate information literacy concepts into curriculum.
- 2) Create online information literacy content available via course management software and the library’s website to supplement the library’s departmental liaison efforts and provide instruction for distance learners.

A significant hurdle will be to gain the cooperation of faculty to allow the librarians to add content to their course management system sites.

The ability to measure and report the actual impact of information literacy on student learning is necessary to establish the library’s contribution towards the university’s academic priority. The library uses LibQUAL+, a web-based qualitative survey tool which uses 22 questions to measure library users’ minimum, perceived, and desired levels of service quality in three dimensions: Information Control, Affect of Service, and Library as Place, including five questions regarding information literacy outcomes. Using LibQual+ in an outcomes-based scorecard is not necessary; other methods are also possible, such as an in-house designed survey for example. The task force, agreeing with ACRL’s opinion that satisfaction is a minor outcome, decides to use LibQUAL+

results, but supplemented by qualitative analysis of the submitted comments, and followed-up by a series of targeted focus groups which can provide important feedback for improving the program (Association of Research Libraries, 2010).

In order to actually measure student learning of information literacy, the task force decides to evaluate and implement a web-based information literacy standardized test. There are a variety of tests currently available, each with its own features, and some, such as project SAILS, are valid and reliable (dependent on sample size). The SAILS test allows pre- and post testing on cohorts, but does not provide individual student test scores (Project Sails Validity and Reliability, 2008).

#### Example Scorecard for the Customer Perspective

**Objective:** Improve undergraduate information literacy skills.

**Hypothesis:** Teaching information literacy skills will provide undergraduates with the necessary skills for academic success.

**Initiative:** LIBQUAL+ provides a measure of user satisfaction with the library’s information literacy efforts. Monitor the LibQUAL+ “Information Literacy Outcomes Questions” scores; perform qualitative analysis of Information Literacy Outcomes survey comments; and perform focus group interviews to gather specific feedback on the Information Literacy program.

**Measure:** LIBQUAL+ Information Literacy Outcomes undergraduate mean scores versus previous survey results.

**Type of Measure:** Lag/Outcome.

**Target:** 10% increase in mean LIBQUAL+ Information Literacy Outcomes undergraduate scores versus previous survey results.

**Objective:** Improve undergraduate information literacy skills.

**Hypothesis:** Teaching information literacy skills will provide undergraduates with the necessary skills for academic success.

**Initiative:** Choose and implement a standardized information literacy test (e.g., SAILS) to be administered by librarians working with departmental faculty.

**Measure:** Test scores by ACRL skill set; this will provide targeted feedback for improving specific aspects of the program.

**Type of Measure:** Lag/Outcome.

**Target:** X% improvement over previous year (baseline to be established).

#### *Internal Business Process Perspective*

Successfully integrating information literacy into the curriculum is the result of a coordinated effort between administrators, faculty and librarians. Administration and faculty have shown leadership and have set expectations through the adoption of the campus-wide learning outcomes. The library intends to position itself as a leader and collaborator in the university's information literacy efforts.

As they seek to establish leading indicators, they see that their best leverage points are the liaison relationships established with course instructors to incorporate information literacy into the curriculum. A performance driver is created: each instructional librarian will seek to establish a certain number of liaison relationships per term, building a community of instructors that are actively incorporating information literacy into their classes. Another measure is established: a certain percentage of faculty relationships actively teaching information literacy as part of appropriate courses.

The committee also discusses the need for balancing academic freedom versus the need for a level of consistency within the information literacy program. While consistency among the librarian's techniques

for integrating information technology into curriculum is not necessary to achieve desired outcomes, consistency is necessary for determining which methods are effective and which are not. The balanced scorecard is a closed-loop system focused on process improvement. If each librarian uses a different approach, it is difficult to determine which are adding value to the program and which are not. To this end, when working with departmental faculty, librarians would use the same materials, provide the same services, and teach the same concepts based on ACRL's Information Literacy skill sets (ACRL 2000).

#### Example Scorecard for the Internal Business Processes Perspective

**Objective:** Librarians develop services and materials to help departmental faculty integrate information literacy concepts into curriculum.

**Hypothesis:** Working with instructors to integrate information literacy is the most effective and scalable method.

**Initiative:** Instructional librarians to work with departmental faculty to integrate information literacy into curriculum; each instructional librarian will set goals to contact a number of departmental faculty per term; a certain percentage of those relationships will be targeted for partnering on information literacy.

**Measure:** Quantity of partnerships.

**Type of Measure:** Lead Indicator.

**Target:** X per term.

**Objective:** Provide online information literacy tutorials.

**Hypothesis:** Online tutorials will supplement departmental faculty's information literacy instruction, support distance learners, transfer students, and provide easily-accessible instruction for all members of the community.

**Initiative:** Create a series of multi-media information literacy tutorials for each ACRL Information Literacy skill set.

**Measure:** Test scores by ACRL skill set; this will provide targeted feedback for improving specific aspects of the program.

**Type of Measure:** Lag/Outcome.

**Target:** X% improvement over previous year (baseline to be established).

**Objective:** Raise awareness among university faculty, staff, and students of the information literacy program and objectives.

**Initiative:** Create a marketing plan to support the information literacy program.

**Measure 1:** Quantity of library information literacy webpage "hits".

**Type of Measure:** Lag.

**Target:** X% improvement over previous year (baseline to be established).

**Measure 2:** Number of students that have taken the standardized information literacy test per term.

**Type of Measure:** Outcome.

**Target:** X% improvement over previous year (baseline to be established).

### Example Scorecard for the Learning and Growth Perspective

**Objective:** Create a shared understanding of options and methods to disseminate information literacy teaching that have the greatest impact on undergraduate student learning in our campus environment.

**Hypothesis:** Though instructional faculty are the campus information literacy experts, a training program will ensure a certain amount of consistency in methods used by librarians to provide services, tools, and instruction to departmental faculty and users.

**Initiative:** Create and implement a standardized information literacy program.

**Measure:** Number of instructional librarians working within information literacy program parameters.

**Type of Measure:** Lead.

**Target:** All library instructional faculty will be working within the information literacy program parameters.

### Learning and Growth Perspective

The task force realizes that they must develop, amongst instructional librarians, a shared understanding of techniques and methods to disseminate information literacy teaching that have the greatest impact on undergraduate student learning in their campus environment. The task force presents its research on the current information literacy literature, techniques, and tools, and creates a proposal for an information literacy program. The measure of this objective, which is both an input and lead indicator, is the number of instructional librarians that ultimately adopt and promote the instructional program.

### Financial Perspective

Resources are required to accomplish objectives, and identifying and allocating the budgetary and human inputs draws a direct connection from these resources to the outcomes. Visibly, this is best seen in the strategy map that connects the cause and effect relationships between the library's allocation of funds and personnel, the value that is added by the library's intellectual capital, and the impact on student learning of information literacy. It is also very useful to be able to demonstrate to university administration the direct effect of allocated funds.

### Example Scorecard for the Financial Perspective

**Objective:** Allocate budget for standardized information literacy testing.

**Initiative:** Choose and purchase/license a standardized testing system.

**Measure:** A standardized testing system has been purchased/licensed.

**Type of Measure:** Input.

**Target:** Tasks completed on schedule per project plan.

**Objective:** Allocate budget and staffing for implementing a project to create online tutorials, content, and license subject guide software.

**Initiative:** Draft a project plan to create content, tutorials; license software for creating subject guides.

**Measure:** Progress made towards the project plan timeline.

**Type of Measure:** Input.

**Target:** Tasks completed on schedule per project plan.

### Discussion

The benefits of using the scorecard become clear when progress towards the objectives is cyclically measured and one can begin to test the hypotheses that structure the scorecard. Chosen measures may or may not be useful, and others may require several assessment cycles before a conclusion can be reached. Even when targets are not met, the scorecard is valuable to identify the initiatives that are ineffective, and to provide a basis for process improvement. Evaluation of the program is an iterative process.

In the Customer Perspective, the focus is on measuring the Library's contribution to learning outcomes. The data collected in this perspective are useful to communicate library effectiveness to stakeholders. Within the university community, library administration may use these data as metrics to support the university's academic priorities, as evidence of

the library's accountability in its use of funding, and to advocate for increased institutional funding. For external stakeholders, the library may use these data as metrics of learning outcomes for accreditation.

Measures in the Internal Business Processes Perspective combine the resources described in the Financial Perspective with the results of the initiatives of the Learning and Growth Perspective to create the outcomes in the Customer Perspective. This perspective provides many opportunities for organizational introspection: Will librarians meet their outreach goals? What Financial or Learning and Growth inputs are factors? Is the information literacy marketing plan effective in spreading awareness? The data collected in the Internal Business Processes Perspective allow managers to establish the validity of the supporting initiatives and measures from the other perspectives.

The Learning and Growth Perspective combines the raw inputs of time, effort, and funding to produce learning outcomes among staff. It can produce a staff which is better prepared to meet the challenges of the future and achieve organizational goals. Success of the scenario's Learning and Growth objectives hinge upon library faculty using a consistent pedagogy in teaching information literacy. If the targets are not met, what were the factors? Were the librarians divided in the chosen approach? What was the reason for lack of participation? For example, if lack of time to participate in the effort is cited as a cause, a library manager may then make informed decisions about how to solve the problem; perhaps the target measure would be achieved with more substantial inputs?

The adequacy of the initiatives and targets set for the Financial Perspective is determined in the other perspectives; if the targets of the other perspectives are not achieved, it may be because of insufficient allocations in the Financial Perspective. If the inputs in the Financial Perspective are correct, the data may help to make convincing arguments to stakeholders, such as: With greater funding,

could the program be expanded to better meet goals, or broadened in scope to include graduate students? Conversely, during challenging economic times, a library manager could reasonably predict the impact of reducing inputs.

Even when the data indicate that targets have not been met, the scorecard is useful as a diagnostic tool for process improvement. Or, if it is determined that the hypothesized cause and effect relationships that were supposed to drive the outcomes are false, the scorecard provides administrators with an opportunity to make informed corrections to their strategy. An examination of the results may also prompt further research. For example, is there a correlation between the LibQual+ survey participants' perceived satisfaction with the Library's information literacy program and the SAILS test scores?

### Conclusion

This article used a theoretical scenario to illustrate the balanced scorecard's use as a systemic model for evaluating and assessing an academic library's learning outcomes. Starting with defining the desired outcomes (in this scenario, improving undergraduate information literacy skills) the scenario described how the Task Force worked backwards, and created hypotheses of the cause and effect relationships between the initiatives and financial and human resources that are required to achieve outcomes. The Task Force established performance drivers, which are the measures that create outcomes. Development of the instructional program through the scorecard's four perspectives helps to ensure that all of the factors for success are identified, and if not, the scorecard is useful as a diagnostic tool to facilitate data-driven evaluation of the instructional process. Creation of a scorecard to assess learning outcomes simultaneously breaks down the process into its elemental parts and aggregates the parts for the completed "jig-saw" puzzle picture called for by Dugan and Herson (2002).

Designed for the private for-profit sector, the scorecard was developed to create the outcome of financial success. Soon, the public sector began to adopt the balanced scorecard as a system to achieve and communicate their effectiveness in serving the public. Accrediting agencies are placing increased demands on institutes of higher education – and their libraries – to prove that they are creating learning outcomes. The example illustrates that the balanced scorecard can serve as a "typical systems planning model" to evaluate and assess an academic library's learning outcomes.

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