A CURRICULUM PLANNING MODEL FOR WORKFORCE DEVELOPMENT

AUTHORS

DR. JACK BYRD, JR.
GRANT STEWART

A RESEARCH REPORT OF THE CENTER FOR ENTREPRENEURIAL STUDIES AND DEVELOPMENT, INC.

West Virginia University
College of Engineering
P.O. Box 6070
Morgantown, WV 26506-6070

(304) 293-5551
(304) 293-6707 - Fax
Introduction

“We need to train our employees,” said Gloria Jenkins, Group Manager of Simpson Inc.

“What’s your training focus?” asked Ned Jones, a training consultant.

“I don’t know. That’s why I called you,” replied Jenkins.

This conversation, or one similar to it, is very familiar to workforce development professionals. Managers would like to conduct a training program, but they don’t know what should be taught. Often training needs are described as problems to be resolved. “We need to be more customer focused or we need to improve our shipment delivery performance,” are common descriptions of training needs.

Often the training that results from such a request is ad-hoc, poorly executed and out of context with other events occurring in the organization. The answer to this situation is a procedure for developing a training plan that is consistent with the overall needs of the business.

This paper examines a planning model for the development of a training program that links together performance expectations and curriculum options to arrive at a rational training plan. The model is presented in a case study format.

The Curriculum Planning Model

The modeling technique that is used to plan the curriculum is the quality function deployment (QFD) approach that has been effectively applied in product planning. A simplified version of this model is shown in figure 1. The basic features of the model are described below.

Employee Expectations — This section of the model describes the initial attributes expected of the employees being trained. These expectations are presented in figure 1 with simple labels. These labels are supported by attribute descriptions like those shown in figure 2.
**Figure 1**

**Quality Function Deployment for Training Needs Assessment**

<table>
<thead>
<tr>
<th>Skills Knowledge Abilities (KSA)</th>
<th>Practice Assessment</th>
<th>Practice Gap</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 2 3 4 5 6 7</td>
<td>3 3 5 3 1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer Focus</td>
<td>M</td>
<td>● ○ ● ○</td>
<td>● ○ ● ●</td>
<td>P F</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quality Leadership</td>
<td>M</td>
<td>● ● ● ○</td>
<td>● ○ ● ●</td>
<td>P F</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Safety Management</td>
<td>H</td>
<td>○ ● ● ○</td>
<td>● ○ ● ●</td>
<td>P F</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Information Exchange</td>
<td>M</td>
<td>○ ● ○ ○</td>
<td>○ ○ ○ ○</td>
<td>P F</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Planning</td>
<td>L</td>
<td>○ ○ ○ ○</td>
<td>○ ○ ○ ○</td>
<td>P F</td>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Scoring: 61 144 48 84 54

- Strong Relation (9 points)
- Moderate Relation (3 points)
- Weak Relation (1 point)
**Figure 2**

**SUPERVISOR EXPECTATIONS FOR SAFETY MANAGEMENT**

- To be familiar with safe work practices as defined by appropriate federal and state regulations
- Takes action to ensure safe work practices are in place
- Conducts training related to safe work practices

**Importance** — This column illustrates the degree of importance placed on the employee expectations. The levels of importance are as follows:

- **H** — High importance (Point value of 9)
- **M** — Moderate importance (Point value of 3)
- **L** — Lesser importance (Point value of 1)

**Practice Assessment/Practice Gap** — The practice assessment is based upon a performance scale as shown in figure 3. A ‘P’ is placed on the scale to represent current performance levels for the employees taken as a group while an ‘F’ indicates where the organization would like to be after the training is conducted. It should be noted that the future point (F) represents a realistic assessment of where employees might be. The practice gap is simply the difference between the present and future levels.

<table>
<thead>
<tr>
<th>Assessment Scale for Safety Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>7 Forceful and highly effective advocate for safe work practices, a personal role model.</td>
</tr>
<tr>
<td>5 Effective manager with regard to safe work practices, occasional problems with keeping safety a high priority.</td>
</tr>
<tr>
<td>3 Enforces safe work practices when urged to do so.</td>
</tr>
<tr>
<td>1 Allows unsafe work practices to occur.</td>
</tr>
</tbody>
</table>

**Skills** — These requirements represent specific skills, abilities, and knowledge that are being considered for inclusion in a training program. The specific skills, abilities, and knowledge chosen for a training program would be accompanied by an outline of what each represents. An example of such an outline is shown in figure 4.
Figure 4

Skill Requirement Definitions for Conflict Management

- Ability to teach employees how to manage conflict through prevention and resolution techniques.
- Willingness to confront conflict situations head on.
- Ability to mediate conflicts.
- Ability to manage one’s own behavior during a conflict situation.

Expectation/Skill Correlations—These correlations are a series of cells that represent the relation between an expectation and a skill. The relation is shown visually as follows:

- Strong relation (Point value of 9)
- Moderate relation (Point value of 3)
- Weak relation (Point value of 1)
- No relation (Point value of 0)

Scoring—The scoring represents the overall priority for a particular skill. These scores are calculated by multiplying the point value for the employee expectation by the point value for the correlations with a particular skill. For example, the score for process knowledge would be

<table>
<thead>
<tr>
<th>Importance</th>
<th>Process Knowledge Correlation</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>M (3) x</td>
<td>○→(1)</td>
<td>3</td>
</tr>
<tr>
<td>M (3) x</td>
<td>●→(9)</td>
<td>27</td>
</tr>
<tr>
<td>H (9) x</td>
<td>○→(3)</td>
<td>27</td>
</tr>
<tr>
<td>M (3) x</td>
<td>○→(1)</td>
<td>3</td>
</tr>
<tr>
<td>L (1) x</td>
<td>○→(1)</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>61</td>
</tr>
</tbody>
</table>

Skill Correlations—This section represents the relation between the two skills that intersect at each cell. For example, the intersection between process knowledge and directing performance is represented by a ○ indicating a moderate relation.

Using the Curriculum Planning Model

There are several insights that can be gained from the curriculum-planning model.
Overall Training Priorities — The most critical topics to be incorporated into the training are shown in the scoring section of the model. In the example of figure 1, directing performance is the most critical skill followed by safe work practices.

Training Focus — The expectation/skill correlations and the practice gaps represent data that can be used to focus the training. For example, the Directing Performance skill category correlates strongly with customer focus, quality leadership, and safety management. Of these three, the practice gap is greatest for safety management. What this is saying is that the directing performance skill would work well if it were to use safety performance as its primary focus area with additional attention given to customer focus and quality issues.

Material Reinforcement — Training works best when concepts are reinforced in subsequent training. The skill correlations illustrate how this can be achieved. Where skill correlations are high, there is a significant opportunity to reinforce a concept. For example, training in safe work practices offers an opportunity to reinforce directing performance skills. In a similar manner, skill building in quality control concepts can reinforce process knowledge.

Meeting the Expectations — The expectation/skill correlations also offer some insight into the expectations that will require the most training to achieve. For example, customer focus expectations can be achieved principally with skill building in directing performance, quality control concepts, and to a lesser degree, conflict management. Some process knowledge is also needed. Quality leadership requires strong skill building efforts in process knowledge, directing performance, quality control concepts, and to a lesser degree conflict management.

Case Study Background

Case Study Background — The curriculum planning model was developed for a metals manufacturer. The manufacturer realized that it must change its way of doing business. This meant that both the managerial and professional staff must begin to function differently. The manufacturer was willing to invest in training but was unsure of its training needs. Managers (middle level and above), supervisors, and non-supervisory professionals would be involved in the training process.

The data collection process for each employee group consisted of structured interviews and focus groups with managers that were senior to the employee group. For example, middle level management was used as a source for data on supervisory expectations. This process was used to collect data on employee expectations and practice assessments, as well as the importance priority for the expectations.

All employees who were interviewed provided data on skills that they would like to see developed. This information was distilled into a collection of skills to be considered for incorporation into the curriculum.
The expectation/skill correlations and the skill correlations were developed by the training staff and the consultants hired to support the project.

The planning model for supervisors is shown in figure 5. The results of the model led to several interesting insights that were not widely understood prior to developing the model. The top skills identified were

1. Oral communications
2. Coaching/training
3. Team-building concepts
4. Continuous improvement concepts
5. Systems thinking

The two surprises in the top five list were coaching/training and systems thinking. Coaching/training was a high priority since the organization began to view the supervisor as more of a facilitator than a superior. As the organization progressed to a greater level of employee involvement, the supervisor was expected to train employees to become more involved. Systems thinking scored high because supervisors are expected to take on a broader role in the organization and must envision more of the big picture.

Quality leadership and general problem solving represented the main focus areas that strongly correlated with many of the skills. The focus of the examples in skill building courses must be on these two expectations.

Next, the reinforcement opportunities were examined by determining where strong skill correlations exist among the top five training topics. These reinforcement possibilities are taken from the QFD chart and are shown in figure 6.
Figure 5
QUALITY FUNCTION DEPLOYMENT FOR SUPERVISOR TRAINING NEEDS
Figure 6
Skill Correlations

| Continuous improvement concepts | Strong Correlations |
|--------------------------------|--|-------------------|
|                                | • Systems thinking     |
|                                | • Team building        |
| Systems thinking               | • Continuous improvement |
| Team building                  | • Continuous improvement |
|                                | • Oral communications |
|                                | • Coaching/training    |
| Oral communications            | • Coaching/training    |
|                                | • Team building        |
| Coaching/training              | • Team building        |
|                                | • Oral communications |

These correlations are helpful in suggesting a sequence of skills to be trained such that every skill is both taught and then reinforced as a subsequent skill is taught. One possible sequence revealed by the skill correlations is

- Systems thinking
- Continuous improvement
- Team building
- Coaching/training
- Oral communications

Finally, the model illustrates how the expectations are met by the training skill curriculum. For the five highest priority skill areas described earlier, every supervisory expectation except financial responsibility has at least one strong correlation with one of the five skill areas. Since fiscal responsibility had few strong correlations, this skill must be dealt with as a stand-alone training topic.

Summary

The planning model outlined here provides the organization with a tool for addressing workforce development curriculum issues. By providing a structure for such decisions, members of the organization can become involved with curriculum planning in a meaningful way. The model also removes the biases that often creep into curriculum planning decisions.
Authors

Jack Byrd, Jr. is the Executive Director of the Center for Entrepreneurial Studies and Development, Inc., (CESD), a non-profit corporation affiliated with West Virginia University.

Grant Stewart is a Resident Associate of CESD and has extensive experience in workforce development.