Course Features that Help Participants Learn: Experience at the World Bank Institute

The Challenge
As a facilitator of global knowledge and learning for development, the World Bank Institute (WBI) offers a range of learning products, many of which are skill-building courses. Teams who organize these courses face many choices regarding design and delivery features. Identifying design and delivery features that help participants learn is an important aspect of providing effective learning opportunities to WBI clients.

World Bank Institute Intervention
Although WBI continues to expand the variety of its services, skill-building courses remain an important share of its work. In FY04, WBI held 1,016 learning events, of which 422, or 42 percent, were skill-building courses. These courses vary in terms of instructional strategy, delivery mode, duration, class size, language of instruction, participant characteristics, and other features. As part of its commitment to providing clients with quality courses, WBI has a vested interest in measuring participant learning and identifying course features that contribute to learning effectiveness.

Underlying Assumptions
WBI skill-building courses are designed and delivered based on the following assumptions:

- WBI courses increase participant knowledge and skills.
- Learning constitutes a critical step in building capacity at the individual, organizational, and institutional levels.
- Instructional practices, course design and delivery features, and participant selection can influence learning outcomes.

Evaluation Methods and Instruments
In 2004, the WBI Evaluation Group conducted a meta-analysis of learning outcomes from 45 FY02 and FY03 WBI skill-building courses.1 The study addressed three main evaluation questions:

1. Were WBI skill-building courses effective in producing participant learning?
2. What course features, notably instructional approaches, did WBI courses use?
3. What factors boosted learning or reduced the knowledge gap among participants?

Data included (a) scores from content-specific knowledge tests administered to participants at the beginning and end of the courses; (b) participant demographics and course ratings; and (c) course features including scope (national scope versus regional or global courses), instructional approaches, and administrative constraints. Course-level information was collected from WBI's management information system and from course teams, based on a survey developed in collaboration with the WBI Learning Design Team.

Participant learning was measured in three ways: (a) “learning gain” defined as the participant’s posttest score minus the pretest scores, (b) “effect size” (average learning gain for participants in a course divided by the standard deviation of the pretest scores for that course), and (c) as the participant’s estimated posttest score controlling for pretest score.

Hierarchical Linear Modeling (HLM)—a statistical modeling procedure that analyzes hierarchically nested data such as participants within courses—was used to test the effect of course features on learning. This analysis focused on two perspectives: (a) achievement: whether a course increased participants' average posttest scores, controlling for pretest, and (b) equity: whether a course reduced the knowledge gap among its participants.

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Participants and Response Rates

Of the 3,748 participants who attended the 45 skill-building courses, 56 percent completed both pretests and posttests that could be matched to assess their learning gain. The survey on instructional approaches and other course features was sent to the team leaders of all 45 courses. Responses were received for 41 courses (91 percent), covering 94 percent of participants.

Evaluation Results:
Learning Effectiveness

1. WBI courses overall were effective in imparting knowledge to their participants. On average, participants across all evaluated courses achieved a statistically significant learning gain of 10.4 percentage points. In addition, 78 percent of the courses showed significant learning gains, above the WBI benchmark. The average learning effect size of these courses was 0.72.

2. Learning occurred in all course types observed. WBI learning events were effective regardless of delivery mode, language of instruction, duration, class size, country of delivery, WBI managing division, number of participant countries represented, whether participant fees were charged, or whether WBI or a partner delivered most of the course.

3. Learning occurred among all participant groups observed. All groups of participants learned, regardless of their gender, education level, age, relevant work experience, region in which they worked, sector, institutional affiliation, level of influence on policy-making, preferred course delivery mode, or motivation for participating.

Evaluation Results:
Course Features Represented

4. All surveyed courses included stakeholders beyond WBI. Out of 12 possible types of stakeholders (e.g., governments, partners, World Bank operational staff), an average of six types were involved in each evaluated course. More than 90 percent of the evaluated courses involved three or more types of stakeholders, and 10 percent involved as many as 10 types of stakeholders. Stakeholders were involved most frequently in course delivery and participant selection.

5. Most course teams reported a high use of good instructional strategies, but time was short. All evaluated courses used one or more instructional approaches that education literature generally considers to be effective, such as defining expectations before a session, linking topics logically,

Figure 1: Effects of Selected Course Features on Learning and Equity

<table>
<thead>
<tr>
<th>Course Features</th>
<th>Effect on Average Learning: Achievement</th>
<th>Effect on Knowledge Gap: Equity</th>
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</thead>
<tbody>
<tr>
<td>Scope</td>
<td></td>
<td></td>
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<tr>
<td>National course scope (participants from one country, vs. regional or global)</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Few regions represented</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Instructional Approaches</td>
<td></td>
<td></td>
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<tr>
<td>Use of good instructional strategies</td>
<td>✔️</td>
<td>✔️</td>
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<tr>
<td>Work on real-life projects</td>
<td>✔️</td>
<td>✔️</td>
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<tr>
<td>Difficult content</td>
<td>✔️</td>
<td>✔️</td>
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<tr>
<td>Longer duration</td>
<td>✔️</td>
<td>✔️</td>
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<tr>
<td>Longer time span (between start and end date)</td>
<td>✔️</td>
<td>✔️</td>
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<tr>
<td>Smaller class size</td>
<td>✔️</td>
<td>✔️</td>
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<tr>
<td>Face-to-face (vs. distance learning)</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Administrative and Organizational Features</td>
<td></td>
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<tr>
<td>Ample time</td>
<td>✔️</td>
<td>✔️</td>
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<tr>
<td>Ample budget</td>
<td>✔️</td>
<td>✔️</td>
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<tr>
<td>Overall favorable environment</td>
<td>✔️</td>
<td>✔️</td>
</tr>
</tbody>
</table>

✔️ indicates a significant desirable effect.

✗ indicates a significant undesirable effect.

These effects are reported only if the p-value is less than 0.1.

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2. These courses and their participants represent about four percent of all WBI learning events and participants in FY02 and FY03. By design, evaluations of learning outcomes target longer, more intensive skill-building courses, so the evaluated courses should not be viewed as representative of all WBI learning events for external clients.

3. In FY02, WBI’s benchmark was 70 percent of the evaluated courses showing a statistically significant learning gain at the 95 percent confidence level. In FY03, the benchmark was raised to 75 percent. In both years, WBI exceeded the benchmark.

4. Training effect sizes of 0.25 are considered small; 0.5, moderate; and 0.75, large. See Cohen, J., Statistical Power Analysis for the Behavioral Sciences (2nd Ed.). Hillsdale, NJ, Lawrence Erlbaum Associates, 1988.
drawing on participants’ existing knowledge, and providing feedback to participants. However, course providers surveyed also reported concern that participants had not been provided with ample time to learn.

6. On average, just over half of the course time (52 percent) was dedicated to participatory methods. These methods included using small or large participatory group sessions, self-paced learning, and exercises. The remaining 48 percent of the time was devoted to presentations by resource people.

Evaluation Results: Course Features that Enhanced Learning
Several course features related to scope, instructional approach, and course administration increased the average learning achievement (see Figure 1).

7. National scope courses were more effective than regional or global courses. National scope boosted learning by nearly 5 percentage points more than regional or global scope did (see Figure 2).

8. Three instructional approaches were related to higher learning.
   - Traditional teaching—face-to-face courses and small classes—was more effective than distance learning and large classes. Participants in face-to-face courses scored nearly 5 percentage points more than those in distance learning (DL) courses.\(^5\)
   - Participants learned more in courses with more difficult content than in introductory courses.
   - Courses having longer duration were more effective than those with shorter duration. Each additional day increased learning by 0.6 percentage points.

9. Several administrative and organizational features of courses boosted learning, notably reported budget availability, time availability, commitment of participants and presenters, positive relationships among stakeholders, and good facilities.

Evaluation Results: Course Features that Enhanced Equity
No course feature both increased learning and enhanced equity (i.e., reduced the knowledge gap among participants of a course), and instructional approaches were particularly important for narrowing the knowledge gap (see Figure 1).

10. Regional or global scope (that is, non-national scope) reduced the knowledge gap among course participants more than national scope did, although the knowledge gap narrowed in both national and non-national courses (see Figure 2).

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\(^5\) Because larger class size (number of participants), shorter duration (number of days of actual instruction), and perceived time and budget constraints were highly correlated with the use of DL, these features may have confounded the findings related to DL.
11. Three instructional approaches improved equity.
- A composite of ten good instructional strategies were associated with greater equity among participants: linking topics logically, drawing on participants’ existing knowledge, providing feedback to participants, reinforcing the message, having participants apply new knowledge/skills, aligning learning and work contexts, using a review process to adjust the ongoing course, defining expectations before each session, providing ample time for learning, and using local facilitators (for DL courses).
- Having participants work on a real-life project improved equity.
- Distance learning courses, which typically have a longer time span, improved equity.

When reducing the knowledge gap among the participants in a course is critical—such as for courses designed to develop a common language among stakeholders to facilitate their working more effectively together beyond the course—efforts could be made to:
- Apply good instructional strategies.\(^6\)
- Spread instruction over a longer time span.
- Have participants work on a real-life project.

**Evaluation Results: Course Features with No Effect on Learning Achievement or Equity**

12. Many course features had no effect on either average participant learning or the knowledge gap, including: number of stakeholders involved, whether needs assessments were conducted, whether a knowledge prerequisite was mandated, homogeneity of participant knowledge at the pretest, percentage of participants who followed the course in a language that was an official language of their country, gender mix of the participant group, delivering the course in English, dedicating more time to participatory activities, inviting participants within intact teams, and covering topics with clear answers.

**Implications and Conclusions**

This study confirms that WBI skill-building courses increase participant learning. However, since no course features had the desirable effect of both boosting learning and reducing the knowledge gap among course participants, the implications of this meta-analysis for WBI course design will differ according to course objectives:

- When increasing learning is more important than equalizing knowledge among the group of participants, the following features could be used by themselves or jointly:
  - Invite participants from one country or few regions.
  - Deliver longer, face-to-face courses for fewer participants, if budget and time are not constraints.
  - Address more difficult content (with no observed risk of increasing the knowledge gap among participants).

**Acknowledgement**

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\(^6\) See evaluation result 11 above, “A composite of ten good instructional strategies were associated with greater equity among participants.”