Computer-based Training at a Military Medical Center: Understanding Decreased Participation in Training among Staff and Ways to Improve Completion Rates

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Background

- Need for this research
- My work-related experience
Problem and Purpose

- The problem was that influencing factors on employee participation in CBT were not well-defined.

- The purpose of this mixed method study was to examine factors that may influence staff participation in mandatory CBT in a healthcare setting in an effort to contribute practical information for hospital educators to design CBT that will appeal to staff and improve participation rates.
Literature Review

Adult Learning
Computer-Based Training
E-learning Driving Forces
Barriers to E-learning Participation
Workplace Learning
Computer-Based Training in Healthcare
<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Sample</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>193 (44%)</td>
<td>434</td>
</tr>
<tr>
<td>24 years old or less</td>
<td>62.5%</td>
<td>34%</td>
</tr>
<tr>
<td>25-34 years old</td>
<td>16.7%</td>
<td>31%</td>
</tr>
<tr>
<td>Male</td>
<td>68%</td>
<td>60%</td>
</tr>
<tr>
<td>Female</td>
<td>22%</td>
<td>40%</td>
</tr>
<tr>
<td>High School Education</td>
<td>67%</td>
<td>50%</td>
</tr>
<tr>
<td>Bachelor’s Degree or Higher</td>
<td>19%</td>
<td>45%</td>
</tr>
<tr>
<td>Clinical Staff</td>
<td>57%</td>
<td>50%</td>
</tr>
</tbody>
</table>
Distribution of Participant Responses to Interval/Ratio Items Assessing E-learning Attitudes and Experiences.

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>M (SD)</th>
<th>Range</th>
<th>Skew</th>
</tr>
</thead>
<tbody>
<tr>
<td>no. of traditional courses started in the last 3 yrs</td>
<td>168</td>
<td>10.90 (10.94)</td>
<td>0-48</td>
<td>1.12</td>
</tr>
<tr>
<td>no. of traditional courses completed in the last 3 yrs</td>
<td>166</td>
<td>10.80 (10.99)</td>
<td>0-48</td>
<td>1.12</td>
</tr>
<tr>
<td>no. of e-courses started in the last 3 years</td>
<td>150</td>
<td>7.32 (15.66)</td>
<td>0-100</td>
<td>3.88</td>
</tr>
<tr>
<td>no. of e-courses completed in the last 3 years</td>
<td>146</td>
<td>7.17 (15.79)</td>
<td>0-100</td>
<td>3.92</td>
</tr>
<tr>
<td>no. of hours worked weekly on e-learning courses</td>
<td>136</td>
<td>3.97 (5.20)</td>
<td>0-30</td>
<td>1.95</td>
</tr>
</tbody>
</table>
Most Commonly Reported Factors Contributing to CBT Completion

- **Personal motivation**: 82 (n) | 66 (%)
- **Company requirements**: 40 (n) | 49 (%)
- **Interesting learning interactions**: 18 (n) | 22 (%)
- **Frequent supervisor follow-up**: 16 (n) | 20 (%)
Relationship between training completion and history of CBT

- Some training: 93 (n), 96 (percentage)
- No training: 4 (n), 4 (percentage)
Relationship between training non-completion and history of CBT

- Some training: 14 (n) and 30 (percentage)
- No training: 32 (n) and 70 (percentage)
Limitations

- The survey did not include items to meaningfully assess some of the desired study characteristics.
- The final sample size was small and not representative of the population.
- There was a large proportion of missing responses from participants across survey items.
- Large discrepancies appeared between the self-reported number of e-courses completed in the last three years and the number of mandatory training courses as noted on the 2011 report Mandatory Training Report.
- Due to missing responses, the completion rate for e-learning courses was limited to slightly over half of the participants.
- The sample for test-retest reliability was inadequate to provide confidence in the findings.
- There may have also been confusion on whether or not a position was considered clinical or not.
- Non-responses to many questions were quite possibly from confusion with what the questions were asking.
Implications

The study revealed:

- There were no differences in training participation among clinical versus non-clinical staff.
- Several factors within the workplace environment that contributed to participation in training.
- Comfort with computers did not have a relationship to training participation, but previous CBT experience did have a significant association with participation.
- There was no relationship between the amount of training and training participation.
- Findings were in alignment with previously published research on computer-based training.
Practical Applications

- Review all current training requirements for fit to job, especially considering the job categories of clinical and non-clinical staff. Specifically, non-clinical personnel should not be assigned clinical training and vice versa.

- Current CBT courses should also be reviewed for instructional design and website usability. All links should be checked for ease of navigation.

- Supervisors should be made aware of the importance of their follow-up and encouragement as a contributing factor to CBT participation.

- The amount of required CBT courses and the time to complete courses should be reviewed and changes made where appropriate to improve efficiency and participation. Consideration should also be given to providing protected learning time to complete required CBT courses.

- Consider if any CBTs might be better received in a face-to-face format.
Recommendations for Additional Research

- Revise the instruments to meaningfully assess the desired study characteristics or develop new instruments with a better fit. Also, validate instrument with a pilot study to improve clarification of questions for participants and improve response rates to individual questions.

- Ensure the availability of company training reports for accurate data to eliminate reliance on self-reports.

- Repeat the study in a similar civilian healthcare facility to compare results to this military healthcare facility. Recommend completing the study in person rather than from a distance to improve response rates and ensure appropriate personnel are included in study. Also, explain survey and interview in person to encourage additional participation.

- Conduct research to clarify the role of computer literacy in relation to participation in computer-based training.

- Compare learning experiences between face-to-face and CBT to determine the most appropriate training platform for the course and learner styles.