6-11-2018

Technology Use for Extra-Curricular Activities and Academic Performance in Library Instruction Sessions

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This poster reports on a study that investigated:

- The impact of students’ use of technology for extracurricular purposes during instruction sessions and its effects on their learning and retention of information.
- Whether attendance at a previous library instruction session provided the students with the advantage of scoring higher in the assessment, and
- Whether the use of these technologies in class sessions was disruptive to other students.

**Methodology**

**Second Approach**

Survey method
- Approved by the University’s Institutional Research Board
- Informed consent
- Attached to the end of the assignment

Students self-reported on their use of phone during instruction session.

Non-participation did not affect their grades.

**Results — Second Approach — Survey Results**

<table>
<thead>
<tr>
<th>Device Used</th>
<th># of Students</th>
<th>% of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smart phone</td>
<td>157</td>
<td>57.93</td>
</tr>
<tr>
<td>Tablets</td>
<td>3</td>
<td>1.11</td>
</tr>
<tr>
<td>Computer/Laptop (supplied)</td>
<td>126</td>
<td>46.99</td>
</tr>
</tbody>
</table>

49% (n=271) students reported at least one activity 28% (n=76) reported 2 activities 15% (n=40) reported 3 activities 5.9% (n=16) reported 4 activities 5.5% (n=15) reported 5 activities 144 (54.96%) were in the control group 127 (42.76%) were in the experimental group

The average score for all the students who self-reported that they did not use a device during class was 0.17 points higher than those who reported they used a device.

These results were not significantly different for the two groups.

**Registration by Class/Assignment in Groups**

<table>
<thead>
<tr>
<th>Classes</th>
<th>Control</th>
<th>Experimental</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class</td>
<td># of Students</td>
<td>% of Students</td>
</tr>
<tr>
<td>CHEM 1051L</td>
<td>50</td>
<td>2</td>
</tr>
<tr>
<td>CHEM 1071L</td>
<td>101</td>
<td>96</td>
</tr>
<tr>
<td>CHEM 1121L</td>
<td>95</td>
<td>91</td>
</tr>
<tr>
<td>Total</td>
<td>246</td>
<td>7</td>
</tr>
</tbody>
</table>

49.81% in Control group
50.19% in Experimental group

**Results — First Approach**

Students in the experimental group (no phones) scored in the higher-grade ranges.

The mean score for students in the experimental group [89.11 ± 10.29, n = 388] was significantly higher (p=0.003) than the control group [86.86 ± 12.61, n = 385]. 1.55% students from the experimental group earned less than 60 points as compared to 3.64% from the control group.

CHEM 1051L/1071L

The mean score for students in the experimental group was 4.22 points higher than the control group (90.19 versus 85.97). This difference is significant (p=0.042).

Students assigned to the experimental group earned in the higher point ranges >80%, 77.03% versus 63.24%.

CHEM 1121L

10.18% of the students in the experimental group earned below 80 points compared with 18.30% of the control group, an 8.12 percentage point advantage for the experimental group.

The mean score for students in the experimental group was significantly higher than those in the control group, 88.85 vs. 87.05 (p=0.037).

**Methodology: Two approaches**

**First Approach**

Randomly assigned the sessions to the experimental and control groups. Experimental group was told to put away their phones during the session. Students were not told why they should put away their phones. Did not monitor students’ use of their phones during the session.

**Conclusion**

One time library instruction

Students who used devices for extra curricular activities in class earned lower points in the assessment. This was true regardless of group (control or experimental) or class (CHEM 1051L/1071L and CHEM 1121L).

Students in the experimental group performed significantly better than students in the control group in the assessment. Students who attended a prior library instruction session scored higher than those who did not. This result is true irrespective of the group the students were in (control or experimental), or if they used their devices for off-task purposes.
