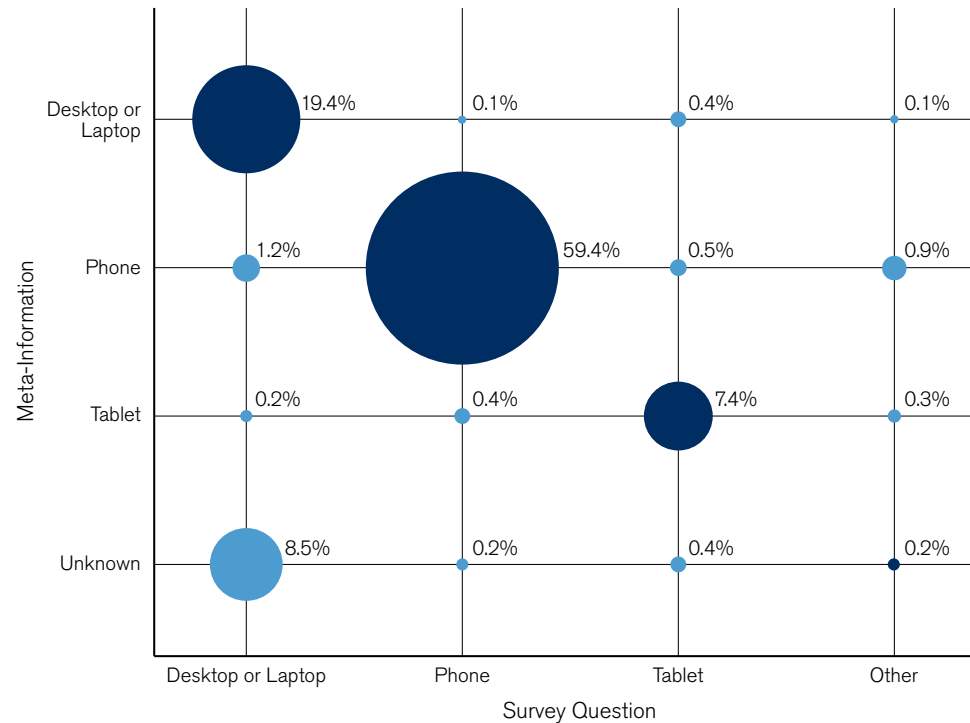# How Do We Know What Device Type Students Use to Complete Surveys?

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Device Type by Survey Question and Meta-Information

In the figure, the X-axis indicates the survey taker's response describing their device type, and the Y-axis indicates the meta-informations's interpretation of the device type. Larger circles indicate a higher instance of response combinations, and the numbers show the percentage of responses featuring that combination. For example, in 59.4% of the surveys completed, both the survey taker and the meta-information indicated the device used was a phone. The navy circles represent the instances of agreement between the meta-information and the information provided by survey takers.

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High school students who took the ACT® test in October 2015 were invited to participate in an online survey about their test-taking experience. As part of this project, two methods were used to collect information regarding the type of device (e.g., smartphone, tablet, desktop computer) that students used to complete the survey. The end of the survey included an explicit question about the device used to complete the survey. In addition, a meta-information tool was added to the survey. This tool operated automatically in the background to provide such information as type of operating system, screen size, and browser. This information was then categorized by device type.[1]

Meta-information has the advantage of being simple to collect in a survey, because it requires no action on the part of respondents. But questions still exist as to the accuracy of this information. If such

information is comparable in accuracy to that obtained from an explicit survey question about device type, then the viability of using meta-information in future research projects increases.

Device type information was collected from 1,870 students via the meta-information tool. Of these, 1,374 answered the device type survey question. It was determined that 86% of the data were consistent across these two data elements (19.4% for desktop/laptop, 59.4% for phone, 7.4% for tablet, and 0.2% for unknown). The consistency was increased to 94.5% by using the data from the explicit survey question to categorize the unknown devices in the

meta-information. Most of the unknowns were desktop/laptop devices (8.5% of the total). The ability to categorize 94.5% of the data increased our confidence in using meta-information in future research projects.

Regarding the 5% of meta-information that was inconsistent or unable to be categorized, such inconsistencies could be the result of students switching devices during the survey. For example, a student might start the survey on a phone and then, for convenience, finish on a desktop or other full-sized device. This seems plausible, given that the meta-information was captured at the beginning of the survey, whereas the question

about device type appeared at the end. Regardless, the knowledge that device type can be accurately determined will serve ACT research efforts by granting a better understanding of fluctuating technology trends. This will help students by allowing ACT to design surveys with improved functionality. ■

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[1] iPods and iPhones were categorized as phones, iPads were categorized as tablets, and Apple and Chromebook devices were categorized as laptop/desktop computers. Windows devices with an operating system of 6.2 or lower were categorized as computers, and all devices with operating systems higher than 6.2 were categorized as unknown. Android devices were categorized as either tablets or phones based on model numbers.