

School Technology Deployments: Battery Calibration Issues

Battery calibration is often misunderstood by schools deploying notebooks and tablets. This is not vendor-specific. It applies to all manufacturers.

Here is some information we have gleaned from the experience of our customers.

Some manufacturers recommend that batteries be properly calibrated prior to deployment and strongly suggest they be re-calibrated after every few months of use. Some provide utilities (inside or outside the bios) that can be used to step through a calibration procedure. All notebook and tablet batteries have internal microprocessors that provide an estimate of the amount of energy in the battery as they charge and discharge. Periodic re-calibration assures that the onscreen battery time and percent display accurately and that users do not assume that the batteries are dead and have to be replaced (prematurely).

All batteries have a limited life (in terms of the number of times they can be re-charged). Some manufacturers specify this as 300 cycles, although it is not always clear what constitutes a cycle.

The problem: Laptops and tablets are often stored overnight in security carts, allowing the batteries to be re-charged. Others are taken home by students, hopefully being re-charged at home before they are used during the school day. In both cases, they never get re-calibrated as part of any routine maintenance. Also, many user forums report that battery life appears to diminish even when the batteries have not really "died."

We hear that most technology coordinators and the teachers responsible for maintaining laptops simply replace a battery when they hear it is not holding a charge. Ideally, they should test the battery's real status by re-calibrating its electronics. Each of our multi-battery chargers has two calibration slots that make this very simple.

The normal calibration process suggested by manufacturers differs, but it usually runs something like this: fully charge the battery; fully drain it by use; then re-connect the power adapter until the battery is fully charged. One manufacturer explains the process this way: "When the battery reaches "empty", the computer is forced into sleep mode. The battery actually keeps back a reserve beyond "empty", to maintain the computer in sleep mode for a period of time. Once the battery is truly exhausted, the computer is forced to shut down. At this point, any open files could be lost. Therefore, it is important that you find an electrical outlet and connect the adapter before the forced shutdown occurs."

We have been told by some customers that their computer vendor ships new batteries at 50% charge, recommending they be calibrated during the first week of use. We suspect this is rarely done, given the press of time and the excitement that usually comes with new equipment deployments. Many schools are not even aware this is recommended. We suggest new batteries be re-calibrated before they are even deployed, assuring that they are fully ready for use.

We have also been told that some user blogs recommend doing this every 30 battery cycles, which would be a huge maintenance burden for a school.

The solution: All of our chargers are equipped with two calibration bays that make this an easy process. The chargers fully drain and re-charge the batteries twice, allowing their software settings to reflect the true state of the battery's charge status. This is easily done overnight without the kind of monitoring and supervision needed by a laptop's own calibration feature.

Again, all of our chargers are equipped with two calibration bays that make this an easy process.

It is possible to provide additional calibration bays on a special order basis.

For more information and specifications, visit <http://www.computerbatterychargers.com/>