



Chair Selection for the Computer Classroom

With the proliferation of computers in classrooms across the country and a growing concern for health and safety issues, it is important to provide the best learning environment possible and to recognize the need for proper ergonomics.

There are key difference between the ideal task chair for the office and the ideal classroom task chair. While budgetary constraints may limit your choices, making a purchasing decision based solely on initial price may result in a costly mistake.

It is important to remember that office chairs are purchased to be used by a single individual and are not required to make the number of adjustments daily to meet the needs of many users.

Since durability is an issue, the number and types of adjustments to be made should be limited to those necessary for learning activities and the methods used to make adjustments should be durable and easy to perform.

The following information may help to make the selection process a little easier.

Seat Height Adjustable

Ideal upright seating position is achieved with feet flat on the floor and both the angle between back and thigh and the angle at the knee slightly more than 90 degrees. Typical office chair options include a spin-lift or lever/button activated pneumatic (gas) cylinder mechanism. For classroom chairs, a lever/button activated pneumatic cylinder is preferred. Quicker adjustment and shock absorption from multiple seating impacts is required.

Seat Tilt Adjustable

For long periods of use, certain close tasks (WP, DTP, CAD and graphics, etc.) require forward-tilt capabilities to protect the back and neck from undue stress. Typical office chair options include a lever/button mechanism. A seat tilt function is unnecessary for the classroom, but for all day seminars, this function may be helpful.



Seat Depth Adjustable

Long-term sitting can cut off the circulation to the lower legs if the seat front is too close to the back of the knee. On the other hand, taller users need support under the thighs to relieve some of the pressure on the buttocks. The backs of typical office chairs tilt with a hand wheel or lever adjustment, or the back may slide out or forward with a hand wheel or lever adjustment. For classrooms, the back tilt with lever adjustment is preferred. It is the most durable and, with proper seat and back design, is adequate to meet the shorter term needs of the student.

Seat Shape Designs

Supports buttocks and thighs. A saddle seat offers support in tilt-forward mode while a split seat meets special needs. Typical office chairs have a flat seat, a flat seat with a waterfall front edge, a modified saddle seat, a deep saddle seat, or a split seat. For a classroom chair, a flat, extra-wide (19") seat with a waterfall front edge fits the widest variety of body shapes and provides adequate support for classroom applications.

Back Angle Adjustable

Reduces stress on the abdomen and lower back depending on the users' preference and needs. Typical office chairs adjust with a hand wheel or lever. Classroom chairs usually tilt with a lever adjustment as a hand wheel is not as durable.

Back Height Adjustable

Supports shoulders and upper middle back as required by certain tasks. The back height is controlled with a ratchet, push-button, or hand wheel for a typical office chair. For a classroom chair, the relatively short duration of the typical class does not require any adjustment.

Back Shape Designs

The chair back shape supports the upper torso. Office chairs come in various shapes and sizes, some with a built-in form to support the lumbar region. For classroom chairs, a medium height back should slightly concave vertically. This fits the largest number of users and requires no height adjustment.



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Seat & Back Tilt

This allows reach-back and leg flex. The rocking motion and tilt enhances blood flow. Typical office chairs are lever activated and tilt-lock in any position with the pivot point at the chair's center, or under knee or synchronized back and seat tilt. The seat and back tilt is not necessary for computer classroom applications unless training sessions are to last for 4 hours or more.

Swivel

The swivel motion provides ease of positioning and reduces stress on the lower back. Typical office chair functions include standard but fixed mechanisms available for conference applications. The swivel feature is generally standard on all classroom chairs.

Mobility

Ease of positioning encourages correct posture and posture changes for varying tasks. Typical office chairs offer single or double wheel hard casters for carpeted surfaces. Soft single or double wheel casters for hard surface flooring are also available. For the classroom it is important that the chairs roll smoothly and that the casters are correct for each floor surface. Caster durability is sometimes an issue; it is best to purchase extra casters for repairs.

Stability

The stability of a chair is obviously an important item to consider. Adequate floor contact will prevent tipping and injury. For office chairs, four, five and six point bases are available. Additional contact points add more stability and reduce required floor space. In classroom chairs, a five point configuration uses the least floor space, and prevents tipping even when the chair is not occupied but has a heavy coat draped over the back.

Frame Construction

Proper chair construction can help prevent structural failure and injury. Typical office chairs feature a combination of plastics, metal and wood to provide a stable seating platform for the normal load range (up to 250 lbs.). Check welds in classroom chairs for consistency, plastic components for durability, and the total unit for ease of maintenance.



Controls: Construction/Configuration

Proper control configuration will provide the user with easy access and encourages the proper adjustment of the chair to promote healthy sitting. Office chairs generally feature levers, push buttons, hand wheels, or locking pins. For classroom chairs, a lever or push button mechanism is preferred. The lever is often tucked under the seat surface to prevent snagging on clothes or a book bag, etc. The lever must be of sufficient strength to endure many adjustments.

Back Construction

The back of a chair should give firm support without applying undue pressure to any single area. The back panel should be protected if the chair will chafe against any furniture placed behind it. A variety of substrates (plastic, plywood, metal, fabric and metal mesh webbing) upholstered in a variety of foams and batting is typically found on most office chairs. For classroom chairs a plywood substrate with multi-density foam padding and a PVC back shell is standard. Plywood permits the ease of reupholstering and the PVC shell protects the back and provides a snag-free surface.

Back Attachment to Frame

The back attachment should provide stable support with little or no wobble. Some flex, however, is desirable. Typical office chairs feature various materials and methods for attachment, while classroom chairs have an angled metal support in the PVC sleeve to prevent anything from snagging or injuring anything or anyone to the rear of the user.

Seat Construction

The seat pan should give firm support without applying undue pressure to any single area. The edges of the seat should be protected if the chair may chafe against any furniture placed behind it. The pan under the seat should be easy to maintain and protect the mechanism. Typical office chair options include a variety of substrates (plastic, plywood, metal, fabric and metal mesh webbing) upholstered in a variety of foams and batting. The pan under the seat may be covered in cambric, cardboard, or PVC. For classroom chairs, a plywood substrate with multi-density foam padding and PVC shell under the seat pad is required. The PVC protects the mechanism from vandalism and provides an easier surface from which to remove gum.



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Seat Attachment to Frame

The attachment should provide stable support with little or no wobble. For office chairs, various materials and methods are used for attachment. Classroom chairs must be durable to withstand heavy use.

Arm Rests

Arm rests support the shoulders, arms and wrists. They also encourage correct posture. Typical office chairs are available in many configurations, fixed and adjustable. Classroom chairs should feature height-adjustable arm rests if the class sessions last longer than 2 hours. They also should be removable or offer seat width adjustment.



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Resources

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