



BCTEA Best Practices Guide

EXECUTIVE SUMMARY

Technology education in BC schools has changed in recent years as a result of funding cuts and the removal of maximum class size numbers by government. There are fewer technology education teachers, and those remaining are teaching larger classes with less supplies, equipment, and maintenance than ever before. In an attempt to address the resultant problems in program quality and teaching and learning conditions, the BC Technology Education Association (BCTEA), a provincial specialist association of the BC Teachers' Federation (BCTF), has compiled a comprehensive document outlining recognized best practices. Health and safety is an underlying theme in all sections.

The technology education environment

Teaching and learning in technology education take place in school facilities that are similar to industrial workplaces. WorkSafe BC health and safety policies cover the teachers and other school district employees, who work in these settings, but not the students. The BCTEA believes that WorkSafe BC should cover students, and that a separate set of WorkSafe BC policies should be developed to address the unique safety issues pertaining to students working and learning in an industrial environment. The most significant factors which influence safe learning environments for technology education students are class size and composition, teacher qualifications, education assistant (EA) training, facilities, and budgets.

Class size and composition

Current class size legislation allows technology education classes of 30 students, the same limit as any other subject area, despite the unique safety issues in the industrial settings typical of shops in middle and secondary schools. Previously, 45 school districts had agreed to put class size limits of 20–24 students in collective agreements, often as firm numbers that were exempted from a—flex factor, and also agreed that the number of students in a shop shall not exceed the number of students which can be safely accommodated, or the number for which the facilities were designed or equipped. Complicating the issue is the growing trend of multigrade, multicourse classes that see a teacher instructing two to four grade levels of students in different curricula during the same class. The government stripped these provisions from teacher collective agreements in 2002, but the liability for safe teaching and learning environments in technology education shops remains.

The BCTEA takes the position that class size in technology education classes should be based on:

- the inclusion of EAs in any class count.
- an absolute limit of 20 students and EAs per teacher (with the exception of drafting classes) or the number that can be safely accommodated in the facilities as designed and equipped, whichever is lower.
- possible further reductions if the class includes beginning ESL students or students with special needs who require additional or unique safety supervision.
- a teacher-student ratio that allows for adequate supervision considering the number of courses running concurrently, and the equipment required for the course, e.g., a senior wood shop presents different supervision challenges than a senior electronics shop.
- a minimum floor area, defined in terms of useable floor area, i.e., not covered by machinery, furnishings, etc., that is adequate for the specific program and its associated equipment, storage, and workspace needs, and
- a minimum area per student to allow for safe working space in the context of the specific program and its associated equipment and activities.

The BCTEA supports the inclusion of students with special needs in technology education classrooms but argues that many students with or without any identified special needs may require an individual education plan if they are to function safely in a shop environment and achieve the goals of the curriculum. Aspects particular to technology education should be clearly defined in the IEP.

Teacher qualifications

For a variety of economic, social, and educational reasons it has become increasingly difficult to employ and retain well-trained technology education specialists in the province's public schools. This has resulted in many teachers without specific training in technology education teaching technology education courses. Some have industry experience and/or qualifications while others are self-taught or hobbyists. The BCTEA takes the position that the minimum qualifications for teaching middle school or secondary technology education classes is successful completion of a Teacher Qualification Services (TQS) recognized technology education training program, inclusive of a practicum sponsored by a teacher who has these qualifications. The nature of teacher qualifications is a factor in program quality and in the safety of the teaching and learning environment.

Training for Education Assistants (EAs)

Increasingly, technology education classes have EAs working with special needs students. Educational assistants, like all other employees, are subject to rights and responsibilities under WorkSafe BC legislation, including the right to training and the right to refuse unsafe work. For an educational assistant to effectively supervise and assist the assigned student(s), they must have a reasonable and verifiable understanding of the procedures, practices, machinery, and tools being used in a particular course and setting. Employers have an obligation to provide training in safe work protocols and to ensure that these protocols are being followed.

Facilities

The BCTEA recommends the establishment of a provincial program advisory committee, comprised of technology education teachers appointed by the BCTF and representatives from industry and post-secondary institutions, to establish provincial standards regarding facility design and a minimum equipment inventory.

Two areas critical to facility design are:

- a minimum floor area, defined in terms of useable floor area, i.e., not covered by machinery, furnishings, etc., that is adequate for the specific program and its associated equipment, storage, and workspace needs, and
- a minimum area per student to allow for safe working space in the context of the specific program and its associated equipment and activities.

The advisory committee's recommendations would be used to plan and maintain shop facilities throughout the province. In the meantime, the BCTEA offers standards for both facilities and equipment needed to effectively run technology education programs in our schools. The standards are intended to apply to new construction or renovations to existing facilities.

Budgets

The BCTEA recommends the formation of a provincial program advisory committee to assist in the establishment of a basic equipment inventory that school districts could use to develop realistic budgets. This group would be comprised of representatives from industry, postsecondary training, and teachers of technology education and would have a good understanding of costs relating to tools and equipment necessary to carry out technology education programs.

For the full report: www.bctea.org



BC Technology Education Association
A provincial specialist association of the BC Teachers' Federation