Bring Your Own Device Guide

Manitoba

BRING YOUR OWN
DEVICE GUIDE

Schools are encouraged to share this document with parents, guardians, and communities, as appropriate.

Any websites referenced in this document are subject to change. Educators are advised to preview and evaluate websites and online resources before recommending them for student use.

This resource is also available on the Manitoba Education and Advanced Learning website at
<www.edu.gov.mb.ca/k12/docs/support/byod/index.html>.

Disponible en français.

Available in alternate formats upon request.

Contents

INTRODUCTION

This guide provides guidance to school leaders who are considering implementing a Bring Your Own Device (BYOD) program in their school. Given that each individual school has its own specific context to consider, this document is not meant to act as a "how to" guide. Instead, the content of this document focuses on the main points to keep in mind. These include

- different models that are available to the school

- policy considerations

- digital citizenship issues

- infrastructure and security issues

- professional learning support for teachers

WHAT IS BYOD?

BYOD or Bring Your Own Device in an educational context refers to allowing "students to bring their personal laptops, tablets, and smartphones from home and use them for educational applications in the classroom" <www.k12blueprint.ca/byod>. Many school divisions throughout Manitoba and the world are considering or are actively implementing BYOD programs using a variety of implementation models. This is a complete change from the past few years in which students' personal devices were often not allowed in the classroom. A decision on the part of a school or school division to implement any aspect of BYOD should only be made after careful discussion. What other approaches that lead to further student engagement in the learning process could be implemented? A BYOD program should not be viewed as the only method of increasing student engagement in a contemporary learning environment. If a decision is made to implement some aspect of BYOD, one of the first considerations is the choice of a BYOD model.

Regardless of the BYOD model selected by a school division, equity in access to devices is a primary concern to Manitoba Education and Advanced Learning and it must be addressed. It is critical that all students have access to the tools and information needed to be successful in their studies. This should extend to allowing students to take school-owned devices home, if necessary, so that they can have access to their school work at home as would students who use their own devices. Establishment of a BYOD program must take the question of equity into account and provide a solution for students who do not have access to a personally owned device.

One important consideration when establishing a BYOD program in your school or school division is which model to follow. There are several different options/models, including the following:

- The students/parents select the device that is brought to school.

- The school/school division dictates the device students are allowed to bring to school.

- The school establishes criteria for device selection allowing for a number of devices to be brought to school.

There are pros and cons to each of these models.

1. **The students/parents select the device that is brought to school**—This model is the least burdensome on parents who have already purchased a device for their child for home use because there is no need for the parent to purchase an additional device specifically for school. This model can, however, be problematic for the school because the school's network might not support all of the different devices. There should also be some consideration regarding how students share their work with their teacher for feedback and assessment. The device used must allow students to share documents in a format that the teacher's device can read. Finally, not all devices are created equally; consequently, the capabilities of devices within the classroom may vary widely, resulting in some students not having the ability to create representations of their learning as well as other students.

2. **The school/school division dictates the device students are allowed to bring to school**—This model assumes that the school will direct parents to purchase a specific device that is known to be compatible with the school network. This ensures that all devices that are brought to school have the same capabilities and will interact well with the school network. As well, this model ensures that the devices that students use are similar to and compatible with the teacher's device. As a result, when the students submit samples of their work to the teacher for feedback and assessment purposes, there should be no technical issues preventing the teacher from receiving and reading the student submissions. This model might not be well-received

by parents if it requires them to purchase a device that is specific to school, in addition to a device already purchased for their child for use at home. If this model is selected, consider the purchase price of the selected device to ensure that an undue burden is not placed on parents.

3. **The school establishes criteria for device selection allowing for a number of devices to be brought to school—**This model gives the parents some flexibility in the purchase of the device. The school sets specific criteria regarding what the device must be able to do and parents provide a device that matches these criteria. The students or parents may already own a device that matches the criteria or there may be devices at different price points available to the parent. This model also ensures that no matter which device students bring to class, it will be compatible with the teacher's device for student work submissions. This model may, however, result in some students having devices with more capabilities than others, potentially creating inequities within the classroom based on the type of device provided by parents.

Each school or school division should select a model in consultation with parents, as parents will bear the financial responsibility of providing the device. As well, the selected BYOD model should ensure that there is equity within each classroom regarding the capabilities of devices. Students' access to information or ability to produce work that demonstrates their understanding of a concept should not be limited by the type of device they bring to school. Regardless of which model is selected, schools must ensure that all students have access to a device throughout the school day. It should be expected that some students, for whatever reason, may not be able to bring their own device to school.

It is critical that the school has additional devices on hand that can be lent to these students. All students should have equal access to devices that are used in the learning process.

As per The Public Schools Act, each school division must create an Appropriate Use Policy (AUP) to govern the use of technology in schools. The legislation, which can be viewed at <https://web2.gov.mb.ca/laws/statutes/ccsm/p250e.php>, states that

> 41(1.5) An appropriate use policy established under clause (1)(b.2) may include provisions that prohibit the accessing, uploading, downloading, sharing or distribution of information or material that the school board has determined to be objectionable or not in keeping with the maintenance of a positive school environment.

The legislation also requires school codes of conduct to include

> 47.1(2)(d) a statement that pupils and staff must adhere to school board policies and the provisions of the code of conduct respecting the appropriate use of
>
> > (i) the Internet, including social media, text messaging, instant messaging, websites and e-mail, and
> >
> > (ii) digital cameras, cell phones and other electronic or personal communication devices identified in the code of conduct or the policies of the school board

In addition, S. 47.1.2 of the Act requires an employee of a school board, school division or school district, or a person who has care and charge of one or more pupils during the prescribed school-approved activity, if they become aware that a pupil of a school may have

(a) engaged in cyberbullying

(b) been negatively affected by cyberbullying

to report the matter to the principal of the school as soon as reasonably possible. If the principal believes that a pupil of the school has been harmed as a result of cyberbullying, the principal must, as soon as reasonably possible, notify the pupil's parent or guardian.

The Appropriate Use Policy (AUP) is of particular importance in the BYOD context. Clear expectations regarding the use of technological devices, including what happens in the event that a student violates the AUP, are essential. Parents must be signatories to the AUP, as well as the child, and it should be renewed annually. Furthermore, it must be clear to staff, students, and parents that the AUP applies not only to school-owned devices but to student-owned devices as well.

Digital Citizenship—Safe and Appropriate Use of Technology

Contemporary learning environments that include a BYOD program give students almost constant access to an immediate global community of people and information. This means that it is now, more than ever, a necessity that our students

- make informed, ethical, and responsible decisions about how they choose to use ICT

- think critically about the information and media that they encounter

- communicate and collaborate successfully with others

- think creatively as they solve problems and take action

- feel confident as "digital citizens"

The concept of digital citizenship relates to the responsible, ethical, and safe use of ICT by students as members of society and citizens of the global community.

> "Everyone has an internal compass, but adults need to teach children how to find and use it." (Ribble, *Developing Ethical Direction*)

Digital citizenship is one of the supporting principles of Literacy with ICT Across the Curriculum (LwICT). Literacy with ICT means choosing and using ICT responsibly and ethically, to support critical and creative thinking about information and about communication as citizens of the global community. Educators play a significant role in guiding, modeling, and supporting their students as they develop their literacy with ICT.

The following sections include some questions to consider when supporting students in the development of their literacy with ICT.

Digital Rights and Responsibilities, Security, and Law

- Keeping in mind recent amendments to the *Public Schools Act (Safe and Inclusive Schools),* have we revised our Appropriate Use Policy (AUP) to include social media and have we made staff and students aware of expectations regarding cyberbullying?

- Are we teaching our students about their rights and their responsibilities in the digital world in regards to copyright, privacy, safety, etiquette, etc.?

- Are our students able to identify and relate personal and societal consequences of the ethical and unethical use of ICT?

- How is the ethical and responsible use of ICT being modelled by our teachers?

- Do our teachers and students know how to protect themselves, their identity, and their electronic data? (e.g., virus protection, password protection, firewalls, backups, phishing, identity theft scams, fraudulent websites/emails, online stalking, etc.)

- Have we given thought to the storage of student data (e.g., cloud computing) and the potential data ownership and privacy implications?

Digital Literacy and Communication

- Do we communicate the destructive effect that cyberbullying has on its victims with all students and develop strategies to prevent cyberbullying from occurring?

- Are we effectively teaching about critical and creative thinking and the ethical and responsible use of ICT when teaching students how to use technology?

- Are we making the best use of technology to extend student learning and support students in developing critical and creative thinking and reaching deeper understanding?

- Do our teachers and students know how to effectively use communication tools (such as social media, blogs, wikis, etc.) to extend and enhance learning and collaboration?

- Do we have a plan to help our students learn and grow from conflict caused by miscommunication?

- Are guidance counsellors and resource teachers supporting students in developing their communication, social/emotional, and conflict resolution skills?

- Are we teaching students how to communicate appropriately and safely online?

- Are we teaching our students to think about the personal and social implications of their online communication?

Digital Health and Well-being

The American Academy of Pediatrics has recently brought forward concerns regarding the amount of screen time to which children are exposed stating that "excessive media use can lead to attention problems, school difficulties, sleep and eating disorders, and obesity. In addition, the Internet and cell phones can provide platforms for illicit and risky behaviors." (See <www.aap.org/en-us/advocacy-and-policy/aap-health-initiatives/Pages/Media-and-Children.aspx>.) The American Academy of Pediatrics suggests that educators and parents limit screen time by offering alternatives to digital media such as books and newspapers.

It is important that teachers ensure that there is a balance between screen time and non-screen time in the classroom. Students must not spend every minute of the school day looking at a screen. They must continue to have face-to-face interactions and collaborations, and use a variety of information sources including textbooks, library books, newspapers, and magazines as part of their studies. Students must also use a variety of manipulatives, aside from virtual manipulatives, to explore concepts and conduct experiments.

Questions to consider related to digital health and well-being:

- Are our teachers and students aware of the possible heath issues associated with using ICT? (e.g., eye strain, ergonomic factors, repetitive stress injury, sleep issues, addictive/obsessive behaviour, etc.) In a recent national survey by Media Smarts called *Young Canadians in a Wired World: Life Online*, more than 50% of students in grade 11 sleep with their smartphone in their room while 25% of grade 4 students do as well. (See <http://mediasmarts.ca/ycww/life-online>.) It is important that teachers discuss the importance of taking a break or "unplugging" from ICT devices from time to time to minimize possible health issues. In the same Media Smarts survey, 35% of students surveyed worry about the amount of time they spend online.

- Are we discussing issues related to a sedentary lifestyle and the need for a balance between interacting with technology, and interacting with people and nature?

- Are we working proactively to identify and reduce possible health and well-being risks in the use of ICT?

Digital Commerce

- Do our teachers and students know which critical questions to ask in order to be informed, thoughtful, and ethical consumers? (e.g., critical media literacy and the effects of consumerism, how online purchases are done in a secure fashion and the potential associated risks, etc.)

It is critical to the success of any BYOD program that students and teachers understand their rights and responsibilities while using information and communication technologies.

INFRASTRUCTURE

When considering the establishment of a BYOD program, there are many infrastructure related concerns that must be addressed if the program is to be successful.

1. **Bandwidth**—A primary concern, related to the school's infrastructure, is bandwidth. Will your network be able to provide several hundred concurrent users with sufficient Internet bandwidth to access and make use of a variety of media types? It is not uncommon for students to access text, video, and/or music as part of the inquiry process. Will your network support this gathering of information? It is also possible that some students and teachers may have more than one device connected to the network at the same time. Students will often bring a tablet/laptop and a smartphone and will connect both to the school network.

   Question to Ask—What amount of bandwidth will be required in our school if every teacher and student has at least one device accessing our network at all times?

2. **Access Points**—As the primary means of connecting to the network in a BYOD program is through Wi-Fi, schools must ensure sufficient access points are distributed throughout the school. Dead spots and weak areas should be minimized through the strategic placement of access points.

   Question to Ask—How many connections can each access point handle concurrently and are all classrooms and learning spaces in the school within range of an access point?

3. **Electrical Infrastructure**—As access points are distributed throughout the school, this can mean deploying more than 100 new electrical devices (depending on the size of the school) as well as charging stations. This often requires additional electrical wiring which has associated costs. These costs should be considered prior to establishing a BYOD program and the work should be completed in advance of implementing the program.

   Question to Ask—Is the electrical grid in the school able to support the multiple outlets required in each classroom for access points and charging stations?

4. **Reliability**—Ensuring reliable access to network resources and the Internet is critical in any BYOD program. Both teachers and students will rely on the network being operational at all times throughout the school day.

   Question to Ask—What measures can we take to ensure that access to the Internet and network resources is reliable and stable? Is technical support available within a reasonable time frame?
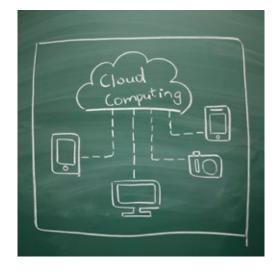
5. **Security**—As students are bringing in their own devices, security of the network should be considered. Not all devices that students bring will have anti-virus software installed and, if they do, it may not be up-to-date.

   Question to Ask—How will we ensure the security of the network?

6. **Cloud Computing**—Cloud computing, through the use of third party storage applications, may help to reduce the costs associated with data storage (hardware and data management), and purchasing and updating software applications.

   Question to Ask—Which data is too sensitive to rely on third party cloud computing?

Of course, with constant advancements in technology, these questions should be revisited annually to ensure that the school infrastructure is capable of meeting current and future needs.

It is important to note that there are significant costs associated with ensuring a school's infrastructure is able to support a robust BYOD program. While the school or school division may see a reduction in budget dollars allocated to acquiring hardware, there will be significant increases in budget in the areas outlined previously. The purpose of BYOD programs is not to reduce technology budgets and should, therefore, not be adopted with that as a primary goal.

Implementing a BYOD program has an impact on teaching and learning strategies. The establishment of professional learning focused on teaching and learning in a BYOD context is a necessary condition for success. This consideration for professional learning must occur well before the BYOD program begins.

Since 2006, classroom use of information and communication technologies in Manitoba has been guided by Literacy with ICT Across the Curriculum: A Developmental Continuum. (See <www.edu.gov. mb.ca/k12/tech/lict/>.) Literacy with ICT is an assessment tool meant to guide teachers and students through the inquiry process and provides a means of assessing the level of critical and creative thinking a student demonstrates at each stage of the inquiry process. Literacy with ICT provides a focus for the professional learning that teachers will require. The emphasis is on inquiry and not on the technology itself. Teachers will require support with the variety of technologies that may be present in the classroom; however, it is equally important, if not more so, to ensure that teachers are comfortable teaching in an inquiry-based environment.

Successful professional learning strategies are generally strategies that are ongoing and not one day events. It is important to identify teachers who are already comfortable teaching in a technology-rich environment and who can mentor other teachers who are less comfortable. Likewise, it is important to identify less confident teachers who may wish to visit a classroom in which the technology is a natural part of the learning process so that they can see the classroom in action. Teachers can also use a portal such as MAPLE, the Manitoba Professional Learning Environment created for Manitoba teachers by Manitoba Education and Advanced Learning, to share resources and ideas related to teaching in a BYOD classroom. Another possibility is to establish online or face-to-face Professional Learning Communities (PLC) in the school that will provide ongoing support to all teachers. If the school has teacher-librarians in place, they can also be a support to teachers and students in the inquiry process.

Whatever professional learning strategies are utilized, it is important to remind all teachers that BYOD is not about teaching the technology to students but rather using technology as a natural part of the inquiry process. It is not necessary for the teacher to be a technology "expert" in the classroom. Instead, it is important that teachers are made aware of the new abilities students

will have in the classroom to engage in authentic inquiry. Students will have real-time access to information they can use to explore curricular-related topics. They will also have the ability to show their learning in a myriad of creative ways and to share their work with a worldwide audience in a truly contemporary learning environment.

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