BYOD: between perspectives and pedagogical realities

Summary by Rodolfo Pérez with final comments

BASED ON THE FILE MADE BY *AURÉLIEN FIÉVEZ, IN COLLABORATION WITH GABRIEL DUMOUCHEL*

A JOINT FILE OF L'ÉCOLE BRANCHÉE AND CARREFOUR ÉDUCATION.

Situation

- In recent years, we have seen a new form of technology integration in the classroom: "Bring Your Own Device (BYOD)" or "Bring Your Own Technology" (BYOT).
- What are the realities, prerequisites and outcomes of a BYOD integration in a classroom?
- How can teachers juggle these tools?
- What are the real advantages and disadvantages of BYOD in the school context?

The different integration models of BYOD

- **Restricted use** requires the teacher to choose one particular tool (e.g., a 64GB iPad Air 2), unique to all. This model allows for easy control over teaching and learning, making it easier for the teacher to take ownership of the technology.
- On the other hand, the students must learn to use a tool that they do not necessarily use normally and that is imposed on them.

- **Targeted use** leaves the choice of device to the student (e.g. a tablet or a computer). However, it must meet certain technical specifications (such as processor or minimum memory requirements).
- It is also necessary to respect the choice of software/applications planned by the teacher. The teacher is familiar with the software/applications and the platforms used. The courses can be based on specific tools and the teacher's freedom is quite present.

- **Single open use** allows the student to choose their tool and software/applications. The student's freedom is greater, however the teacher has to adapt to the different platforms, they need to show flexibility in their teaching.

- **Multiple open use** covers all the perspectives of BYOD. It allows the student to use any tool and even multiple tools in the classroom.
- The Teacher is highly flexible and classroom management is more complex, but there is also greater pedagogical innovation.

What configurations are possible in the classroom?

- touch tablets (iPad, Android, Windows, others);
- laptops (Mac, PC, Linux);
- one or more desktop computers already present in the classroom;
- digital music players (e.g. iPod);
- electronic readers;
- smartphones (iPhone, Android, Windows, others).

if access to the school network can be ensured for each of these tools, focus can be on the pedagogical aspect

Why use BYOD in a classroom? (Models)

- In order to make this approach comprehensible, parents and students must be assisted.
- With an explanatory video,
- a guide for parents,
- a digital code of conduct and
- a set of resources for parents

Disadvantages nevertheless

- the lack of equity between students and
- an extra workload for the teacher.
- an additional investment for parents
- On the other hand, the teacher will often have to manage tools with different operating systems and versions.
- At some point, it will be necessary to either troubleshoot students' issues with or without the help of a technician, or to designate student experts who can help their peers solve technical problems encountered in the learning context.

Summary of advantages and disadvantages

Benefits	Disadvantages
- Increased collaboration among students; **- Critical thinking and student accountability;** **- Increased communication between students and teacher;** **- Access to information anywhere, anytime;** **- Continuity between school and home;** **- Reduced costs for the school;** **- Prepares students for the realities of the workplace;** **- Personalized learning.**	- Technical requirements: bandwidth and infrastructure; - Lack of equity among students; need for additional hardware; - Network and data security; - More complex classroom management; - Requires additional technical expertise for the teacher; - More complex lesson planning; - Additional workload.

Various recommendations

- **school and technology**. On the one hand, by adapting to their existence, and on the other, by regulating their pedagogical use.
- **Involve students and parents** in the choice of the tool, since the users are the first to be concerned in this choice. As for the school and its teachers, they can provide advice on the most relevant tools.
- **Infrastructure is** optimally adapted to these new realities. The wireless network is sufficiently powerful, access to software and sites relevant and useful for their training is not blocked at the institutional level.
- **Technical and pedagogical support**: teachers are able to help their students when they have difficulties in using their device and technicians are sufficiently available to respond to the demand.

How to integrate BYOD in a school?

- **Provide reliable and efficient access to the Internet**
- an Internet connection with sufficient bandwidth.
- **Promote equity among students**
- The school should therefore ensure, within the means available to it, that all students have access to technology. An adequate supply of assistive equipment will enable less priviledged students to enjoy the benefits of ICT.
- **Empowering students to use technology**
  - use of the chosen tool is "channelled".
  - clearly distinguish the activities that are necessary for their learning and that promote their academic success.
  - banning certain applications or restricting the use of the tool to certain periods would be useless and illusory.
  - Circumventing prohibitions is easy and they may find motivation to do so.
  - It is therefore preferable to confront them with their mistakes and to highlight the consequences of misuse on their academic success.
  - In other words, the use of social networks, text and other communication elements should not be banned, but refelcted upon.

The ICT Charter

- The use of the device inside the establishment involves precise rules;
- The consequences of improper use are clearly defined;
- The regulations must be moderated to avoid demotivation and lack of attendance of the students;
- Rules for the use of Internet sites are specified and prohibited sites are determined;
- The rules of conduct are established: respect for oneself, respect for others and respect for the school.
- To achieve this, it is essential that schools :
- Promote digital access by ensuring the participation of all students;
- Promote communication through interaction and information exchange; and
- Promote fluency, i.e., students learn the technical aspects of their tool in order to enhance their learning.

How to implement BYOD in a classroom?

- The teacher must act at the level of micro-management of the teaching-learning environment. To do this, they must:
- Personalize learning to motivate students through their interests and needs;
- Promote student participation in the classroom and in their learning process, including communication, cooperation and collaboration among students;
- Promote student productivity. Students can produce content based on what they learn. Provide the tools needed to produce the documents: software or applications for organizing (mind maps), writing (word processing) or other.
- Overall, there is a need to encourage collaboration and sharing among students.

How to integrate available digital content?

- the teacher must establish in advance the digital content they wishe to use with their students
- the teacher must ensure that each tool brought into the classroom by the students allows them to access and use the digital content selected for teaching/learning beforehand

Which practical resources for BYOD?

- **Videos about BYOD**
- *BYOD: AVAN, c'est pour maintenant!* a comical video summarizing BYOD produced by educational consultant Marc-André Lalande.
- *Why BYOD? a* video explaining why the Peel District School Board (Ontario) has chosen to implement BYOD in its schools.
- *BYOT Success*: video of successful BYOD implementations in schools.

BYOD : Conclusion and references

- In summary, we find that BYOD encourages learning across time and space.
- However, training, technical and pedagogical support, as well as available tools, are essential elements to consider when implementing BYOD in a school context.
- It is therefore important that educational stakeholders are aware of the positive and negative implications of such integration.
- On the other hand, the school must establish a framework for the technologies used

References

- Afreen, R. (2014). Bring Your Own Device (BYOD) in higher education: Opportunities and challenges. *International Journal of Emerging Trends & Technology in Computer Science*, 3(1), 233-236.
- Alberta Education. (2012). *Bring Your Own Device: A guide for schools*. Edmonton, AB : Minister of Education.
- Alberta Government. (2014). *Technology briefing : Bring Your Own Device*. Edmonton, AB : Author.
- Benham, H., Carvalho, G., & Cassens, M. (2014). Student perceptions on the impact of mobile technology in the classroom. Issues in Information Systems, 15(2), 141-150.
- Burns-Sardone, N. (2014). Making the case for BYOD instruction in teacher education. *Issues in Informing Science and Information Technology, 11*, 191-201.
- Cochrane, T., Antonczak, L., Keegan, H., & Narayan, V. (2014). Riding the wave of BYOD: developing a framework for creative pedagogies. *Research in Learning Technology*, 22.
- Emery, S. (2012). *Factors for consideration when developing a bring your own device (BYOD) strategy in higher education* (Mémoire de maîtrise, California College of the Arts).
- Fortson, K. (2013). Creating device-neutral assignments for BYOD classes. *Technological Horizons In Education*, *40*(2), 6.
- Garlati, C. (2011). La consumérisation de l'informatique. Récupéré de http://www.trendmicro.fr/media/wp/wp-consumerizaton-of-ent-mobility-fr.pdf
- Hopkins, N., Sylvester, A., & Tate, M. (2013). Motivations For BYOD: An Investigation Of The Contents Of A 21st Century School Bag. Dans *Proceedings of the 21st European Conference on Information Systems*.
- Lennon, R. G. (2012). Bring your own device (BYOD) with cloud 4 education. Dans *Proceedings of the 3rd annual conference on Systems, programming, and applications: software for humanity* (p. 171-180). New York, NY : ACM.
- Miller, K. W., Voas, J., & Hurlburt, G. F. (2012). BYOD: security and privacy considerations. *IT Professional*, *14*(5), 53-55.
- Nykvist, S. S. (2012). The trials and tribulations of a BYOD science classroom. Dans *Proceedings of the 2nd International STEM in Education Conference* (pp. 331-334). Beijign : Beijing Normal University.
- Raths, D. (2012). Are You Ready for BYOD? *THE Journal*, *39*(4), 28-32.
- Shim, J. P., Mittleman, D., Welke, R., French, A. M., & Guo, J. C. (2013). Bring Your Own Device (BYOD): Current Status, Issues, and Future Directions. Dans *AMCIS 2013 Proceedings*.
- Song, Y. (2014). "Bring Your Own Device (BYOD)" for seamless science inquiry in a primary school. *Computers & Education*, *74*, 50-60.
- Statistique Canada. (2010a). *Utilisation d'Internet par les particuliers et les ménages – Tableaux sommaires*. Ottawa, ON : Gouvernement du Canada
- Statistique Canada. (2010b). *Utilisation des technologies de l'information et des communications par les entreprises et les gouvernements (Entreprises qui utilisent l'Internet)*. Ottawa, ON : Gouvernement du Canada.
- Vanwelsenaers, M. (2012). *Students using their own technology device in the classroom: Can "BYOD" increase motivation and learning* (Mémoire de maîtrise, North Michigan University).