Report of the Independent Review Group (IRG) on the use of tablet devices in Ratoath College (RC)

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1.0   Background

This section presents the background for the review.

1.1   Background

Ratoath College (RC) was established as a co-educational multi-denominational designated Community College in 2005 under the patronage of the County Meath VEC (now LMETB since 2013) and the Roman Catholic Diocese of Meath. The BOM (BOM) is slightly larger (12 members) than the normal BOM in an LMETB school and is comprised of:

•   3 nominees of ETB
•   3 nominees of the Diocese of Meath
•   2 parent nominees
•   2 teacher nominees
•   2 Community nominees

The School Principal acts as secretary of the BOM.

Ratoath College was chosen by the DES as one of the six pilot schools for the School Self Evaluation Process. A number of established teachers transferred to Ratoath in the early years and brought experience in the use of Information and Communications Technology (ICT) in Teaching and Learning. There was a growing investment in the use of ICT in Teaching Learning and Assessment and the school was involved in a pilot with others schools notably Coláiste Baile Chláir (GRETB) and Coláiste Pobal Setanta (DDLETB) to develop a digital strategy in the early years of the last decade . Some teaching materials were developed, exchanged and placed on a suitable virtual learning environment – Schoology. The school was heavily involved with Microsoft but a decision was taken by management to change and introduce Apple iPads from September 2014 .Thus all students since then have worked with iPads. Some have sat the Leaving Certificate and the Leaving Certificate Applied examinations in 2019, not having taken the Transition Year (TY) programme, while the bulk of students will do so in June 2020. The School currently has 1069 students and started with 66 students in 2005.

All first year students in successive years were required to buy an iPad initially through the school but, since 2017, directly from Wriggle, a retail company. Teachers were required to purchase iPads as well. This was particularly financially demanding for young teachers as even by 2014 the school was still expanding with many new teachers. There has also been quite a significant turnover in teaching staff. Many teachers had to struggle with large rents particularly if not living relatively locally and with the move to a 2 year postgraduate teaching qualification and large fees this financial pressure accentuated in recent years. At the same time teachers were facing challenges in three areas;

•   For new teachers induction and meeting Teaching Council requirements.
•   For all teachers the demands of the new Junior Cycle reforms with Curriculum Based Assessments (CBAs).
•   The need to be trained in the use of iPads and to develop suitable teaching materials.

Students did not have a textbook for each subject area and relied on a class set of legacy textbooks which did not fully meet the requirements of the new Junior Cycle curriculum. There were eBooks only in Maths and Irish for second and third year students and work books in some subjects. It is claimed that the original security software was problematic. Since September 2017 all new iPads are managed using a product called Zuludesk and it is claimed that since then no student has been able to remove the management.

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During the early part of 2019 there was growing concern expressed by some parents who called for the removal of iPads. The school undertook a digital learning consultation (as required by Circular 0038/2018) towards the end of March 2019 with teachers, parents and students. The results are discussed in section four of this report. Some 23 emails regarding the use of iPads were sent to the PA before its meeting on 26th March and a note was prepared and transmitted via the PA reps on the BOM who raised the matter under AOB at the next Board meeting in early April and also on matters arising at the following Board meeting on 14th May. A delegation from a concerned parents group was invited by the Chairperson of the BOM to address this Board meeting. A decision was taken to continue with iPads for the following school year but it was agreed that an independent review would be undertaken. A petition signed by a significant number of parents had called for their abolition forthwith. The concerned parents group protested at a special board meeting in late July. Subsequently, the Board reaffirmed, while a full independent review was warranted and would be undertaken early in the next school year, it would be necessary for continuity to continue with iPads for first years in 2019-2020. The Principal issued a letter dated 19th July to first year parents informing them of this decision stating that supports would be put in place in relation to training and guidance for parents on the use of Schoology and managing screen time. The principal also issued a document: *Some facts about iPads in Ratoath College.*

1.2   Terms of Reference of IRG and method of Review

While two members of the Review Group had been identified by late August there was a delay in securing a third member until early October. An early meeting with the BOM, whose term was coming to an end, was arranged. When the Review Group met the BOM on 9th October it was indicated that it would not be possible to meet the proposed deadline of 4th December but that it was hoped the report would be finalised by mid-January 2020. The Final Terms of Reference as agreed with the BOM reflect this extended deadline.

2.0   Digital Terms of Reference for an Independent Review of the Use of Tablet Devices in Ratoath College

2.1   Scope of the Review

Ratoath College is a co-educational, multi-denominational Deed of Trust Community College catering for the educational needs of the parishes of Ratoath and Curragha. The BOM of Ratoath College has engaged Dr Carl Ó Dálaigh, Ms. Cora Dunne and Dr Ann Marcus Quinn (hereinafter referred to as "the Review Committee") to carry out an independent review of the use of digital Devices for learning and teaching in Ratoath College, and to make recommendations on the use or otherwise of such devices in Ratoath College.

Procedure
1. During the review, all parties are required to respect the privacy and dignity of all others involved.
2. The Review Committee will have sole responsibility for the process and shall be the final arbitrators on any matters of procedure raised with them. During the review, the Secretary of the BOM will be available, as required, to facilitate the progression of the review.
3. The Review Committee may seek any information or raise any issue which they consider relevant to the review but will at a minimum have regard to the following in their work:

•Circular 0038/2018 – Consultation with the School Community including Teachers, Students and Parents on the use of smart phones and tablet devices in schools. (Department of Education and Skills)
•The Digital Strategy for Schools 2015-2020 – Enhancing Teaching and Learning. (Department of Education and Skills);
•The Digital Strategy for Schools 2015-2020 - Action Plan 2017. (Department of Education and Skills);
•Report on the Consultation with Young People on the Digital Strategy for Schools. (Department of Education and Skills and The Department of Children and Youth Affairs);
•The Digital Learning Consultation conducted by Ratoath College;
•Correspondence and feedback received by the BOM
Current Research and Best practice.
4. Refusal or failure to co-operate by any party with the review will not prevent The Review Committee issuing a report based on the information available.
5.The Review Committee, may at their absolute discretion, request such submissions, hold such consultations or conduct such surveys as they deem appropriate, ensuring that the key stakeholders, Students, Staff and Parents are included.

2.2 Reporting

The Review Committee will prepare a final report which will include, but is not limited to:
- A copy of the terms of reference for the review;
- A schedule of reports, circulars, publications considered by the Review Committee;
- A schedule of any consultations or surveys that the Reviewers may have conducted
- A schedule of any other relevant information;
- A narrative detailing the findings of The Review Committee
- A narrative detailing the recommendations of The Review Committee

The final report will be presented to the BOM at a special meeting of the Board in mid-January 2020 The report will also be published in full on the website of Ratoath College. Copies of the report will also be provided to key stakeholders, the Students, Staff and Parents of Ratoath College, the Board of LMETB, Ratoath College Parents' Association and the Department of Education and Science.

2.3 Members of the Independent Review Group

The members of the IRG are:
- Ms Cora Dunne , Former Principal, Boyne Community School Trim
- Dr Ann Marcus –Quinn, Lecturer in Technical Communication and Instructional Design, University of Limerick
- Dr Carl Ó Dalaigh, former Deputy Chief Inspector , DES (Chairperson)

Having been briefed by LMETB officers and staff the IRG held a meeting with the outgoing BOM on 9th October as part of the last meeting of that Board. The IRG then commenced its work in detail. It decided to meet a broad cross section of teachers in the school ranging from those heavily committed to iPads to those who were not in favour of their use, 13 teachers in all (including senior management) as well as an SNA and a member of the office staff. Two LMETB schools were visited who use iPads, and an interview took place with the Principal of a third LMETB school where the use of iPads has been discontinued. In addition, the Chairperson also met senior management in a Community School in relation to their ICT provision. Meetings took place with other relevant officers in the LMETB. The IRG met

with three members of the Parents Association and with three members of the Concerned Parents Group in Ratoath College and with two other parents. Some 14 members of the Student Council were also met. An independent education expert was also consulted. Finally a meeting took place with two personnel from Wriggle. While the IRG would have liked to have visited other schools or met with others it was not possible due to severe time constraints. The interactions are shown in Appendix A.

A Range of documentation supplied by LMETB or furnished by the Concerned Parents group or sourced by the IRG is shown in Appendix B.
All Meetings were recorded. An extensive survey of teachers, students and parents was undertaken by the IRG and is shown in Appendix C. All of this evidence forms the basis for our findings and recommendations.

At the outset the IRG was impressed by the whole hearted welcome extended to them and the total involvement of all from senior management, teachers, SNAs students, parents, office staff, BOM, LMETB schools, other LMETB personnel and many others in the review process.

3.0 Current Practice on the Use of iPads in Ratoath College and Three Other LMETB Schools and a Community School

3.1 Use of iPads at Other LMETB Schools and in a Community School

This section presents the information collected from other schools that participated in the review.

3.1.1 School A

Training was essential for teachers before iPads were used. It was too difficult to involve all teachers at the one time and so iPads were phased in. The Parents' Association was strongly opposed to iPads. New teachers find that there is a lot to be absorbed. Students like hard copy. The iPads are available for use on a trolley system and the system is working well. There is a strict no phones policy which students generally like. All devices are encrypted. Generating content was very demanding on teachers .School uses Share Point. It is important for students to be happy in a safe environment. There is a good book rental scheme and the computer room is freed up. The PCs are fully functional. The school would prefer Microsoft Surface Pros for staff. However, there is no LMETB Acceptable Use Policy for staff at present but there is for students. LMETB provides IT support one day a week.

3.1.2 School B

The iPads are now in school since the second year of its existence and were introduced with little consultation. There was a requirement by teachers to buy their own iPad. There is access to hardcopy books through a rental scheme. Some teachers created digital teaching resources during the summer holidays. Schoology is used. Wi-Fi provision has been enhanced. There are parental concerns and distraction is an issue. There is a ban on the use of smart phones. Some issues with the service provider arose. Where books were absent there was deterioration in performance in exams in some subjects.

3.1.3 School C

This school which is in its sixth year decided to discontinue the use of iPads from September 2019. The introduction was incremental as numbers increased. There was a lack of teacher training and know how. The iPads were bought through Wriggle but after a while there was slippage and students began to bring in their own devices. Some students had a Wriggle account and a school account and this caused confusion. Parents were not sure if homework was being done and could not quantify student progress. There were issues about teachers generating their own content, leaving and the new teacher not having access to resources. The school had a book rental scheme and with the decision taken to abandon iPads the fee for books has increased. First and fifth year students have hard copy books in all subjects. Other class groups still use the iPad but now there are some textbooks as publishers gave free books to supplement material. This principal has stated in terms of behaviours, educational attainment and finances that the situation is much better now.

3.1.4 School D

This school had very poor Wi-Fi and a new enterprise standard system was installed. There are no issues regarding Smart Phones as students are not given access to the school's Wi-Fi. The school adopted Microsoft about three years ago. For a school in excess of 900 pupils there are:

- 5 computer labs (excluding DCGPCs)
- 56 Desktops – one in each classroom
- Joey Cart with 25 Microsoft Go mobile devices
  16 Epson digital projectors
- A Dreamspace with 24 Microsoft Surface Gos. This room can be booked for classes.
- 2 Raspberry pi minicomputers
- 30 BBC microbit minicomputers
- 12 Sphero Robots
- 65inchTY and mobile stand.

Using Office 365 the students have the tools to communicate and collaborate as necessary.

3.2 Current practice and ICT provision in Ratoath College

There are currently two PC labs equipped with 31 HP desktop student PCs and a teacher desktop and projector in every classroom. If there were two data points in each room there would be a much better and more efficient Wi-Fi offering. The DCG classroom has 24 high powered PC to run software. A small number of laptop PCs are available to be used for presentations in prefabs, open spaces and library. The PE department has 13 iPads. The DES funded one device for every two students. This funding was only provided to the schools participating in the PE pilot. Every classroom is wired in the new school. The school is investigating putting in Smart Screens in the new extension.

Ratoath College has been exclusively using the Enterprise version of Schoology as the Learning Management System for the last 5 years. Every student at Ratoath has access to a full suite of Office 365. Staff communicates with students using email using Schoology. There are a total of 29 apps used on the student iPad. Duolingo is the most used app. The school has a digital learning plan, mobile phone and device policy, an ICT usage policy and an anti-bullying policy including cyber bullying.

4.0 Findings

For the purposes of this review the IRG spoke with the majority of participants in a focus group setting. Students were interviewed in a focus group, as opposed to individually, so that group members could contribute to each other's ideas and responses and therefore more useful information could be gathered. Many researchers claim that the number of interviews conducted depends on how much data is being generated in each succeeding interview. The interview process stops when new interviews no longer reveal much new data. Those involved in this review consistently made much the same comments and observations, so it can be reasoned that were more interview sessions undertaken, little more information would have been revealed. Some of the questions in the focus group interview protocol were replicated in the online questionnaires. The IRG heard a variety of positives and negatives from teaching staff in school and from parent group and students and this along with results from surveys has furnished us with evidence to make findings and recommendations.

An online survey was conducted to find out how teachers and students have been using their iPads for teaching and learning activities. The purpose was also to ascertain how the iPad may have had an impact on other aspects of their lives outside of school. The survey was disseminated by Ratoath College and was open for two weeks. Additionally, parents of students at Ratoath were invited to respond to the survey and to provide information on their experience of the iPad policy and how this policy had affected their child/children. It was the aim to capture the types of challenges that they may have encountered.

All three surveys were anonymous and comprised of a series of open-ended questions, requiring textual responses. These questions enabled respondents to provide as much detail relating to their personal experience as they were willing to provide. After gathering the results, textual responses were collated for further qualitative analysis. Thematic analysis is an approach that allows researchers to identify patterns and themes in qualitative data. This broad thematic analysis was intended to identify themes and enable the IRG to understand respondents concerns, particularly any issues that may not have been raised during the interviews.

Both teachers and staff responded to the survey in an efficient manner. However, the student response to the survey was lower than expected. Even though class time had been allocated for students to respond to the survey students took on average between three and five minutes to complete the survey. Given that there were 19 questions to respond to the amount of time that the majority of students gave to engaging with the survey could only be described as superficial at best. The IRG raised their concern about the lack of engagement with representatives from the student council and a decision was made to run the survey again thereby offering students another chance to contribute their experience of using the iPads. This second survey ran over one week.

4.1 Findings from the Review

The findings from the interviews and surveys are summarised in the following section. When asked about the most rewarding aspects of using the iPads most of the responses from students were focussed on the apparent convenience that the iPad can afford. Many listed the following as positive aspects of using the iPads:

- Convenient method of contacting teachers,
- Using a Learning Management System for accessing class materials,
- Being able to use PowerPoint to create a presentation,

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- Being able to take a photograph of the board,
- Having folders for everything so that work is organised,
- Sometimes being allowed to play games.

However, none of these functions are exclusive to an iPad device and would be available if the iPad was replaced with an alternative device.

4.1.1 Distraction

Similar to international studies, distraction was one of the key themes that emerged from the review. Many international studies have also reported that the iPad and similar devices are major sources of distraction for students (Alhumaid, 2019; Karsenti & Fievez, 2013). Comments relating to distraction permeated through the responses to many questions from interviews and surveys (past and present). From the teachers' perspective many reported that when they are at the top of the classroom the student ability to switch from class-based work on iPads to recreational activities such as gaming, shopping and engaging with social media was a matter of concern.

"Monitoring whether students are on the app. Students picking up iPads when they are not supposed to be on them. Impossible to monitor if they are on games or social media. Students are not supposed to be on games but have ability to download them." (Teacher)

Some teachers did state that monitoring student use was not an issue but these comments were in the minority. These same concerns were also evident in the information provided by parents. Students are also too easily taken off task. The majority of parents and teachers reported that monitoring iPad use in class in an ongoing challenge.

"(He is) totally distracted...no back up of books for him to study from. Can't confiscate iPad and tell him to use books. Wi-Fi needed for my job full time from home therefore cannot switch it off. Child is confused with different folder. Book would be better. They can see exactly where they left off and can take in information better."(Parent)

An issue that was also raised by teachers was parents messaging their children during class times.

"Sometimes it is their parents sending them the messages during class time." (Teacher)

The student engagement with the first survey that the review group ran is indicative of the distraction that the iPad affords. Many students spent on average between 3 and 5 minutes responding to the survey out of an allocation of 15 minutes.

"Many people airdrop things to each other which is quite distracting if iPads aren't muted..." (Student)

"I find people getting distracted is the most difficult part as you could be trying to focus and someone is playing games in front of you and the Wi-Fi is not working in school." (Student)

Some 36% of students in the March survey, conducted by Ratoath College, stated that distraction was an issue for them. A small number of parental responses to the survey did note that they felt that their children were excelling at second level and were enjoying the use of the iPad. They felt that the iPad enhanced the student experience.

4.1.2 Quality of Resources

There are eBooks available in Mathematics and Irish at Junior Cycle. There are no hardcopy textbooks for other subjects but there is a set of older legacy textbooks in class. The students use hardcopy materials for English e.g. novels and plays. The current situation has necessitated teachers handing out copious amount of photocopies and notes. Where the iPads are used as a delivery point for the use of high quality digital resources (from Scoilnet) they function well. However, for some teachers there was little material available and the acquisition of suitable digital materials was limited. Therefore, the burden of creating digital resources was greater.

Instructional Design is a profession and requires times, resources and support. Where material has not been professionally designed it offers a poorer learning experience for students (Akpinar and Simsek, 2007; Baytak and Hirca, 2013). One of the recommendations of the Stavanger Declaration (2019), the culmination of a four-year Action by 200 scientists across Europe, stated that when introducing digital resources into teaching and learning, teachers should be made aware that a rapid and indiscriminate move away from paper is not without negative consequences. In the absence of textbooks and professional time and resources teachers have had to resort to synthesizing material from textbooks and uploading it to Schoology. This has been particularly onerous on Newly Qualified Teachers in a still expanding school.

From the interviews with students and from the surveys it is stated that often the only record of the classwork was a photograph taken (by the students) of the text on the whiteboard. This was problematic for some students as the angle of the photo gave a poor record of the class activity. One remedy to this may be to have the teacher take the photo at the end of the class and share this with the students. Many students stated that if they missed a class they had to deal with *"missing patches"*. The photo of the board was not sufficient to try and catch up on notes so they had to try to get notes from classmates. Many teachers, students and parents would have liked to have used eBooks.

"These iPads … did not come with books on them. There should be books on the iPad rather than trying to read teachers notes PowerPoints books on iPads can improve clear information if the teachers not clear." (Student)

"We bought all the hardcopy books so we could read the whole chapter then go back to the notes which then made sense. Some teachers' notes look like notes of notes." (Parent)

"It's Harder - harder to study from and some notes can only be found in poor quality on Schoology." (Student)

"The students wanted books when we surveyed them. The kids want something concrete in front of them." (Teacher)

Where teachers are being asked to create their own resources instead of using textbooks, much of this is done in a piecemeal manner and means that students are given information that is presented without the context afforded by a textbook. Materials made available to students should be of a high quality and the only way to guarantee this is to recognise the professional expertise that is required to create high quality digital material (Marcus-Quinn et al, 2019). Many students reported that teachers did not seek any feedback on the digital material offered. If some feedback on usability could be captured it could significantly

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improve the student experience. It must also be noted however, that a number of teachers (including Languages, Classics, Maths and Science and Construction Studies) found the use of the iPads to be indispensable. Some parents were also satisfied with the use of the iPad but would like to see more resources made available to students.

"I think it's been great. Technology is the way of the future.   My Son is a good person for studying but we are unsure if there is enough course work uploaded on the iPad. I would like to see digital downloads of the school books, alongside individual teachers' slides, rather than just teachers' notes." (Parent)

4.1.3   Technical Issues

Technical issues emerged as a problem for some with teachers and students reporting that connectivity to the internet is not equitable across the school building. For example, where the Wi-Fi network is daisy chained, some parts of Ratoath College will have excellent connectivity to the internet whilst some classrooms will have a very weak signal. Some teachers reported that it was very difficult to ensure that all students could be on the Wi-Fi simultaneously.

"Wi-Fi problems!!! There is always a student who cannot connect to Wi-Fi or Wi-Fi is not fast enough for all 30 IPads in the class." (Teacher)

Some students reported that the battery life of the iPad was not sufficient and ensuring that the iPad was fully charged for class was an on-going concern.

"Sometimes the Wi-Fi can go down in some parts of the school and Schoology wouldn't work." (Student)

"I thought doing homework would be easier on I pads but it turns out most homework isn't done on I pads and when it is it isn't as easy as I thought it would be" (Student)

It was evident from some of the responses to the survey that some students were anxious about managing their iPad. Some were afraid of breaking the iPad and ensuring that the iPad was sufficiently charged for a full day of use was a worry for many.

"Keeping it charged, not getting water in it when it's raining and the water is going through my bag and not breaking it." (Student)

"Connecting all the accounts up to the iPad because sometimes it logs out." (Student)

"The battery dying …not being able to access websites that are needed for class." (Student)

Some students also reported that there were problems accessing Schoology. In one case a student had a duplicate account and this caused a lot of problems when trying to login and access material.

4.1.4   Perception of Teacher Professionalism

From the interviews and survey responses there is an awareness among some staff that they lack skills in ICT. Teacher training on the use of the iPad was inadequate. In contrast to this, in the four other schools examined, it is evident that in at least three of the schools consulted training was provided on a phased basis from the outset. In one of the schools training was mandatory before teachers were given an iPad. Teachers at Ratoath College had to buy their own iPad and this did not bode well from the outset. Some teachers described how they had been incorporating ICT into their classroom teaching and learning practice long before the arrival of the iPad and felt that the iPad was an unnecessary addition.

"Teachers able to cover courses regardless of using iPad or not." (Teacher)

"Before iPads were introduced I took groups to the computer room to do group work. I prepared notes online for all my exam classes… I prepared materials, resources and activities online also. I used digital technology as an aid to my teaching." (Teacher)

It was also stated that the ownership of digital material has been an issue in some subjects. Teachers have had to buy their own iPad and have had to create their own digital teaching material outside of the normal working week. This practice has blurred the lines of ownership of teaching materials and had resulted in some teaching materials being removed from the Schoology Learning Management System when teachers left the school to take up employment elsewhere. This withdrawal of digital material was a significant problem for students.

4.1.5   Revision

A strong concern was voiced by parents regarding the difficulty of revision for students. Due to the absence of a suitable textbook in most areas and lack of organisation in collating and managing their notes revision was seen to be a very difficult task. Some parents reported that their children were overwhelmed and felt that they had insufficient content to hand when they needed to revise for terminal exams.

"When revising, all her notes look the same, making it harder, in my opinion, to distinguish the important facts.   The iPad, for day to day class use, is fine, but when it came to revising for summer exams, the table was strewn with pages of notes and hand-outs, all in very random order.   My daughter is generally very organised but even she found it stressful trying to figure out how to organise her vast array of notes." (Parent)

Some parents reported that they have had to organise private grinds for their children in subjects where there is little appropriate digital content available in class. Many parents stated that when it came to revision the students preferred to use hard copy material. A number of parents stated that they had bought a set of hardcopy books for home use. In some instances this created conflict at home as the child did not want to use the hardcopy material.

"I think the iPad has opened up a world of knowledge for my children to explore however, when it comes to studying for tests and exams, both my children have turned to a second-hand set of books which I keep at home. Studying for any length of time on an iPad is very tiring and hard on the eyes. Plus they are a distraction to study sometimes too." (Parent)

"It appears very disorganized and when trying to find notes on a particular topic he had to scroll through pages and pages of PowerPoint presentations to find some notes related to what he was trying to study. In the end we bought a text book and he has begun to use this instead." (Parent)

"I do not believe that the iPad has a negative impact on my child's learning but would like to see a combined approach where books are also available. If a child is struggling on a subject it is difficult to find the source of all material between files on iPad, copy books etc. A text book might be a good reference point or single source." (Parent)

Many of the students reported that they did not use a traditional keyboard to write up homework. They used the iPad Touch keyboard. There have been some recent international studies which look at memory and recall where digital materials have replaced the traditional hardcopy. Schilhab et al. (2018) found that "whereas printed text affords numerous stable material anchors in the moment for memorizing, digital texts are much reduced in this respect." Another study by Mangen et al. (2015) also looked at the use of technology (standard keyboard entry and iPad Touch keyboard entry) and traditional handwriting to recall a word list. In this study, handwriting was associated with better free recall of written material as compared to material written using conventional keyboards on PCs and virtual keyboards such as those on iPads. While the researchers acknowledged that the outcome may have been influenced by the participants having grown up learning to read and write using pen and paper rather than keyboards, it is noteworthy. Students at Ratoath may not have considered how their choice of method for notetaking may have impacted on their recall and revision.

4.1.6   Use of email

All students use email as part of their normal school day. At Ratoath College the LMETB email must be used exclusively. However, there were instances where students were unaware that they had two email addresses (one supplied by Wriggle and one supplied by the LMETB). Some students were unaware that they are issues with using a non-LMETB email address. All work associated with the school must be associated with the LMETB email account as using the LMETB email exclusively is compliant with GDPR regulations and if there is an issue with an account it can be wiped remotely by the LMETB allaying any concerns that parents may have.

4.1.7   Parental Monitoring

A further issue for parents was ongoing monitoring of online activity and progress. Indications are that parents would prefer the hardcopy journal as a means of recording and tracking homework and communicating with the school. Many parents reported that they felt there was little consistency with how Schoology was used across subjects.

"I find the Schoology site to be difficult to use and very varied in terms of the teachers input." (Parent)

A small minority of parents reported that they do not monitor their child's iPad at all. This is problematic and the school needs to communicate the importance of parental involvement.

4.1.8 Physical and Wellbeing Concerns

The majority of student comments relating to the advantages of the iPad were in relation to the reduced weight of the schoolbag. Some students reported that they found having the iPad was less stressful for them as they did not have to remember which books were required on a daily basis. However, some parents reported that when it came to revising for exams their children were quite stressed.

The reported late uploading of homework to Schoology in some cases has also contributed to an increased level of screen time by students. Where parents have put a digital curfew in place this type of activity undermines it. There were a number of comments pertaining to an increasingly sedentary lifestyle by students. Strategies may need to be implanted to promote higher levels of physical activity. There were also comments relating to functional physical issues such as neck pain and eye strain.

"It isn't good for your eyes if you're looking at a screen all day." (Student)

"Late at night my neck and back gets sore from looking down for so long. Also the stand on the cover for my iPad broke." (Student)

"I also get migraines from using my iPad." (Student)

It may be useful to have an Occupational Therapist to consult with parents and students on issues relating to posture (neck and back), motor skills issues when using iPads for a variety of tasks (writing and studying) both in school and at home. For example, recommending stretching strategies to offset neck/back pain. Some of the older students when interviewed stated that they now used a variety of strategies to combat the effect of a lot of screentime. These strategies included adjusting the text size and using the night settings available on the newer iPads. There were no instances of cyber bullying reported in the student survey; one student commented that there are guidance counsellors available if someone is being cyber bullied. However, there were some comments relating to cyber bullying from parents. A small number of parents commented that their child had been cyber bullied on the iPad.

4.1.9 Inappropriate Content

Notwithstanding the concerns raised by some parents it was surprising that the use of the iPads to access inappropriate content did not arise as a major concern for the majority of parents. In the March survey 78% of parents stated that they regularly checked for inappropriate content. Popular media may suggest that age inappropriate material is accessed regularly on student school-based iPads but the survey did not yield this type of information. There was no mention explicitly or otherwise of pornography in the teacher survey. There were two comments relating to students accessing pornography from the parent survey. There was information given in the survey which related to an instance of inappropriate content. This information has been passed on to school management. When asked about accessing inappropriate content many students reported that they played games on the iPad if they had a free class or if they were bored. Some students stated that did not use the iPad for gaming activity as the restrictions on their device did not allow for this type of activity.

Despite these findings it must be said that there have been concerns mooted in the literature regarding the inappropriate use of iPads and other smart devices. For this reason the IRG recommends that students are fully informed on data protection regulations, the illegal use of iPads and other devices and how all devices can be used safely. This could be an appropriate

module within the new Wellbeing curriculum at junior cycle. There is also a place for this to be covered under digital literacy.

4.1.10 Student Progress

There was strong concern from many parents regarding student progress during the Junior Cycle. For many parents they were in a position to compare and contrast siblings where the older sibling had outperformed the younger sibling where the latter had been using the iPad at junior Certificate level.

"We have one daughter who has finished in RC and did not use the iPad. One daughter who completed JC with it and is now in LC. Our daughter's results who is in LC now and scored much higher on STEN tests than our oldest daughter has been getting increasingly worse results and her JC results were extremely disappointing for her. a large part (of her poor performance) was also due to her inability to connect with the iPad and she found it a distraction and a hindrance rather than a benefit. She uses the books prescribed for LC however not all subjects have/use books and she is relying on her phone as she previously did with the iPad for JC." (Parent)

Some teachers also voiced their concerns on this issue. It is significant that many teachers whilst still using iPads at Junior Cycle had reverted to using textbooks at senior cycle. It is noted that there is a greater reliance on text books for the senior cycle.

4.1.11 Cost

Throughout the interviews and the surveys there were comments on the high cost of the iPad. The cost of the iPad placed a financial burden on some families and on some teachers. This cost has been discussed extensively in the Irish media and is highlighted as a concern in the literature (Coyne and McCoy, forthcoming).

"The costs of putting (a number of children) through the school … on iPads put severe financial pressure on us." (Parent)

Some students were also disappointed that they had to use an iPad when a less expensive tablet could have been used to offer at least the same level of functionality.

The next section of the report presents the recommendations of the IRG.

5.0   Recommendations

The IRG recommend the following based on the findings from the review process.

5.1   The furnishing of the new extension

The update of the infrastructure in the existing school must be commensurate with that available in the new building. It is recommended that the enhancing of the Wi-Fi system in the old school and the kit out of the data points needs to be addressed in conjunction with the equipping of ICT in the new school by September 2020.

5.2   Microsoft system

It is recommended that incoming first year students in September 2020 will not be required to buy an iPad for school use and it is also recommended that the school move to using a Microsoft system. This would be consistent with the ETB current policy of using a Microsoft management system. It is recommended that trolleys be kitted out with Microsoft Surface Gos. Initially two sets of 30 to be purchased for September 2020 and this could be increased on a phased basis to address the school needs. These would be introduced to first year students from September 2020.

Teachers would not be required to purchase a Microsoft Surface Go and following required mandatory training teachers would be given a Microsoft Surface Go. The reasons for this change to Microsoft are as follows: LMETB operates on a Microsoft administrative basis. Moving Ratoath College to a Microsoft system will complement the existing administrative structures and make the annexation of the new premises as seamless as possible. The school should use the systems already in place such as Microsoft Teams and SharePoint. There are many advantages to using Microsoft one of which is the use of Microsoft Teams which simplifies school administration and classroom management. For example, the School Data Sync automatically populates classes with student rosters connected to the school's information system. OneNote Class Notebooks are built into every class, enabling teachers to organise interactive lessons from Teams. The end-to-end assignment management also enables teachers to move from creation and distribution to grading and feedback.

Using a keyboard associated with the Microsoft Go from the outset will also facilitate the development of critical keyboard skills which is an important life skill. Having access to a trolley based device will result in less screen time, because they will not be used in all classes and will not be used at home. Trolley access will also limit their use in and around the school. Such monitored use will also undoubtedly reduce the high levels of distraction reported and concerns expressed by all stakeholders around screen time and inappropriate use of same.

5.3   Introduction of Books and Use of Digital Resources

Given that there would be no requirement for first years to buy an iPad all first year students will instead purchase a full set of textbooks. School management should investigate how these books may be introduced into the school book rental system in three years time.
It is recommended that in second year all students will have use of a complete set of books at a reduced cost. There should be a book rental scheme in place. The cost for second years' book rental will take into account that this year group will have bought an iPad previously.

High quality digital teaching materials are to be used where available. Teachers should investigate the options available on Scoilnet and other online repositories where applicable.

To use or not use technology should remain teacher led. Where a Microsoft Go is used the eBook should be available. Third years should have a complete set of books in addition to their iPads. Transition Year, 5th and 6th year already have a book rental system in place. It is noted that from the interviews and survey responses that these year groups were using the iPads less frequently. These year groups could also have access to the Microsoft surface Gos. Access for senior cycle students to the proposed use of the trolley system will decrease the current need for bringing your own device at senior cycle.

However, the IRG recommends that the use of phones in the school should be looked at. The IRG was impressed by what the members of the school council said. *That using the phone is a privilege and should be earned.* In its contact with some other schools the IRG is aware that these schools have chosen not to use smartphones and this is working very well.

5.4   Learning Management System and Use of Email:

Schoology is an unnecessary expense for all students. There are many similar offerings with no associated cost. Many other schools use systems such as Edmodo. The purchase of the Microsoft Gos could be offset against the savings made from the annual outlay to Schoology which is in the region of 10k. The IRG recommends that prior to moving from Schoology that there is a planned migration and download of resources housed on Schoology to the new system. This migration of resources would ensure that all teachers and students would continue to have access to their digital teaching and learning materials.

5.5   Online Management

For both teachers and students all work associated with the school must be associated with the LMETB email account. Each teacher should be provided with a device similar to what is made available to the students. An acceptable usage policy for staff should also be developed. All devices must be encrypted to be GDPR compliant. Receiving this Microsoft Go would mean that the teachers would already have undertaken the required mandatory training on how to use the device.

5.6   Training of Staff

It is important that teachers make themselves aware of what is available in terms of training and resources from the Department of Education and Skills. There should be a set amount of hours allocated to this training before the end of August and also an agreed number of hours to be set aside for training throughout the year. This is done on the understanding that there is continuing technical support from the LMETB. S and S time could be used for teachers to undertake some of the training. If a teacher leaves the school they must hand back the device to the school and they must leave a copy of any digital teaching resources that they have developed while working with the school.

A member of staff should be assigned to the care and maintenance of the trolleys. This person would also look after the organisation and use of the trolleys which would include booking and scheduling of their use. The training of teachers will have to be managed by school management. This will necessitate an ongoing review system for necessary training. Where training is deemed necessary it would be ideal if this training could be taken at a subject departmental level.

At the end of the school year the digital learning team should review the year's activity and make the necessary recommendations and changes.
•   How the existing system is working.
•   How this is working with the new school
•   How the funding is working.

The current makeup of the LMETB's central ICT team needs to be looked at. The one to one device policy requires a much higher level of support and maintenance than is currently available.

5.7   Training for Students

Microsoft Education offers an extensive support for schools and is well placed to provide this training. In the past Ratoath College was a global Microsoft Mentor School and availed of the supports offered by Microsoft to foster innovative teaching and learning. A two hour slot is suggested as a start. This training would allow for three two hour slots per day. This training should be provided at the beginning of the school year and should be repeated as and when needed (revision and updates).

All students would be provided with a demonstration of the system to include working with the equipment and the online system. These activities should be supported with hardcopy documentation detailing what needs to be done where students are required to upload homework/use a PC/device for homework.

It is also recommended that students have timetabled time every week dedicated to digital literacies. Teachers should be facilitated to bring the device home.

5.8   Training for Parents

At outset of the school year, ideally in the first few days of September all parents of first year students should attend an information session. A member of staff to provide a demonstration of the online system in the school.

5.9   Alternative Technologies

The school should also consider exploring using the Raspberry Pi (https://www.raspberrypi.org/) with a small group of students, perhaps Transition Year students, as an alternative to the Microsoft Surface Go. The Raspberry Pi (or simply Pi) is a small computer about the size of a credit card and is a cost effective (approx. €100 including microSD card, cables, case, and power supply) alternative to a device such as a tablet. The Pi is not a portable device as it needs to be plugged in and connected to a monitor, keyboard and mouse. As with most devices the Pi can be used to browse the internet and play from streaming sites such as YouTube but earphones or speakers are needed for sound. The Raspberry Pi allows access to a wide range of free open source educational software such as LibreOffice (with similar functionality to Microsoft Office), GeoGebra and Mathematica (for mathematics), Scratch and Python for teaching programming, and many other packages for teaching physics and chemistry. It has the potential for strong security as it is based on a flavour of Linux but this would need an experienced administrator to implement. Also, with software such as VNC a teacher with administration rights would always be able to remotely monitor the usage of the devices.

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5.10   Improved Channel of Communication

In the light of the IRG's findings and proposed recommendations it is further recommended that improved channels of communication should be established at all levels between:

- LMETB and the BOM,
- Parents' Association and School Management.

5.11   Homework Schedule

Bag weight was one of the reasons proffered for the school deciding to use the iPads. Members of the student school council stated that some homework is not given out in a timely manner. Homework should be assigned at the end of the class and also uploaded to the online system. In addition to this the homework policy needs to be refined so that homework is given out more evenly throughout the week. This would allow students to plan which books need to be in their bag for any given day. School management needs to be involved in the drawing up of this homework schedule to ensure an equitable schedule is devised. The IRG notes that there a homework code in the staff handbook 2019/2020. The use of 50 minute classes should also address this issue and reduce the number of books that need to be transported to and from school every day.

Some homes have a digital curfew in the house. The Student Council should be consulted and work with the year heads to determine a recommended curfew.

5.12   Outstanding issues that need to be addressed

The IRG is aware that issues have been raised by a number of stakeholders in relation to personal phone use. It was stated that Smart phones had been used in some classes at senior level. The recommended access to use of the new trolley system should help to alleviate this where it has been an issue.

Finally, the IRG recommends that the school review all policies in relation to ICT use and also review the digital learning plan.

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Appendix A List of people/ schools met or contacted by the IRG

Ratoath College 2 October, 2019
Director of Schools and the Director of Organisation Support and Development, LMETB

Ratoath College 9 October, 2019
One member of senior management, Ratoath College
Nine members of the outgoing BOM, Ratoath College

Ratoath College 17 October, 2019
Five members of staff, Ratoath College

Colaiste na Hinse , Bettystown 22 October, 2019
Eight members of staff, Bettystown

Colaiste na Mí, Navan 22 October, 2019
Four members of staff

Ratoath College 23 October, 2019
Two members of staff, Ratoath College
Three Committee members of Parents' Association, Ratoath College
Three members of the Concerned Parents' Group, Ratoath College

Ratoath College 5 November2019
Fourteen members of the Student Council, Ratoath College
Three members of staff, Ratoath College

Ratoath College 15 November 2019
Two members of senior management, Ratoath College
One officer, LMETB

Ratoath College 20 November 2019
Two personnel from Wriggle
One Officer, LMETB
Seven members of staff, Ratoath College
Principal Coláiste Cu Chulainn, Dundalk

3 January 2020
Two parents

Discussions with Others
Principal of a second level school, Galway
3 members of staff St Brendan's Community School, Birr
Independent education expert, Limerick

Appendix B Documents supplied to or sourced by IRG

1. Circular 0038/2018 Consultation with the school community on the use of smart phones and tablet devices (DES)
2. The Digital Strategy for schools   2015-2020- Enhancing Teaching Learning and Assessment (DES)
3. The Digital Strategy for schools   2015-2020 Action Plan (DES)
4. Report on the Consultation   with Young People on the Digital Strategy for schools (DES and Department of Children and Youth Affairs)
5. Outcomes of the Digital Learning consultation conducted by Ratoath College   March - April 2019
6. Correspondence received   by the BOM and LMETB from the Concerned Parents Group
7. Media Impact report 17 April 2019 to 20 June 2019 augmented by material supplied by the Concerned parents Group at Ratoath College up until October
8. Additional material supplied by the Concerned Parents Including address to BOM
9. The use of Tablet Devices in ACCS Schools (2013)
10. A survey of 607 students and 302 teachers in Quebec, 2013   Preliminary Report of Key Findings '' The iPad in education : Used, Benefits and Challenges
11. Some Facts about iPads in Ratoath College issued   by Principal on 19 June 2019 after BOM meeting reaffirming decision to   continue with Ipads
12. Correspondence from Councillor Gillian Toole (former Chairperson BOM) 6 January 2020.

Appendix C Survey of Teachers, Students and Parents conducted by the IRG

RATOATH COLLEGE INDEPENDENT REVIEW OF IPADS
Participant Information

The BOM of Ratoath Community College has established an IRGto examine the use of tablet devices for teaching and learning in Ratoath College, an LMETB school. The members of the review are Dr. Carl O'Daly (former Deputy Chief Inspector in DES) , Ms. Cora Dunne (former Principal Boyne Community School, Trim) and Dr Ann Marcus-Quinn (Lecturer in   Technical Communication and Instructional Design at UL) .

You are invited to participate in this independent review.
Your participation is voluntary. Even if you agree to participate now, you can withdraw at any time without explanation or consequences of any kind.

The survey is designed to investigate the effect of the iPad policy at Ratoath College.
If you agree to participate this will involve filling in an anonymous survey.
You will not benefit directly from participating in this review.

If you have any questions about this survey you can contact Mr. John McCarthy at
RatoathCollege@lmetb.ie

Thank you.

Cora Dunne.
Ann Marcus-Quinn
Carl O'Daly

For Teachers

Questions to try to capture the need to prepare teachers before iPads are used as primary tool:
1. Before the iPad policy was introduced had you used an iPad before? To what extent?
2. Before the iPad policy was introduced had you used a blended approach in teaching your subject(s)? To what extent?
3. What did you anticipate to be the most difficult aspect of using iPads in the classroom?
4. What did you anticipate to be the most rewarding aspect of using iPads in the classroom?

Questions to try to capture the need to support teachers before iPads are used as primary tool:
1. What did find the most difficult aspect of using iPads in the classroom?
2. What did you find the most rewarding aspect of using iPads in the classroom?
3. What are the main educational applications on the iPad that you use in class?
4. Do you use resources from a repository such as Scoilnet? Why/Why not?
5. Have you been allocated time during your working week to design and develop digital resources for teaching purposes?
6. Have you been allocated resources/equipment to design and develop digital resources for teaching purposes?
7. What do you use to create your digital teaching resources (**a PC/laptop or iPad**)?
8. Have you carried out usability testing of the digital resources that you have created?

Questions to try to capture the ongoing needs of teachers using iPads as primary tool:
1. What are the main learning tasks that you ask students to carry out using the iPad?
2. Have you witnessed students performing a variety of tasks during class that are not strictly academic including messaging and gaming?
3. Do you find classroom management easier or more difficult with the iPad?
4. How does the iPad support the teaching and learning of your subject(s)?
5. Do you feel it is important to use the iPad for all learning intentions? **Yes or No answer.**
6. Do you use a blended approach? Please describe.
7. Do you feel that you can use your professional judgement when choosing and integrating resources for class? (e.g. traditional textbooks or technology).
8. Is the time being spent on creating your own resources taking time away from formative assessment such as correcting copies, giving feedback on assignments etc.?

Workload
1. What wellbeing supports (if any) are in place to counter the effects of excessive use of technology?
2. Do you feel that using the iPad has had any impact on your physical health?
3. How do you view balancing both creating and updating resources in tandem with new junior cycle planning, CBA planning and assessment, and preparation for SLARs?
4. Has using the iPad made your workload easier or harder?

For Students

Questions to try and establish the student experience of using the iPad for academic purposes during the school day
1. What did you expect to be the most difficult aspect of using iPads in the classroom?
2. What did you expect to be the most rewarding aspect of using iPads in the classroom?
3. Has using the iPad made your workload easier or harder?
4. What did find the most difficult aspect of using iPads in the classroom?
5. What did you find the most rewarding aspect of using iPads in the classroom?
6. What are the main educational applications on the iPad that you use in class?
7. Do you know if you have used/use resources from a repository such as Scoilnet?
8. Have your teachers ever asked you for feedback on their digital teaching resources?

Questions to try and establish how students' time on the iPad outside the classroom is spent on academic activities
1. Do you use the iPad to organise your school agenda?
2. How do you complete homework?
   a. Type up work on a keyboard device
   b. Finger tap directly to the iPad
   c. Write out my written work by hand.

Questions to try and establish how much of students' time on the iPad outside the classroom is spent on social activities, amusement, and other recreational uses.
1. Outside the classroom how do you spend most of your time on the iPad?
2. Do you use social networks such as Facebook?
3. Do you play online games after school?
4. Do you spend time watching videos or surfing the Internet?
5. Do you use the iPad to listen to music?

Revision
1. Do you use the iPad or your own handwritten notes for revision?
2. Do you prefer to use a textbook or an iPad for revision?

Wellbeing
1. Do you feel that using the iPad has had any impact on your physical health?
2. What Wellbeing supports (if any) are in place to counter the effects of excessive use of technology?

For Parents

Questions to try and establish parents' perception of the student experience of using the iPad for academic purposes during the school day

1. What do you consider to be the most difficult aspect of using iPads in the classroom?
2. What do you consider to be the most rewarding aspect of using iPads in the classroom?
3. How do you consider the "iPad only policy" has impacted on your child's academic achievement? Please provide some detail.

Questions to try and establish how students' time on the iPad outside the classroom is spent on academic activities
1. Do you know how your child uses the iPad to organise their school agenda?
2. Do you use your parental access to monitor your child's activity on Schoology? Please provide some detail.
3. How does your child complete homework?
    a. Type up work on a keyboard device
    b. Finger tap directly to the iPad
    c. Write out my written work by hand.

Questions to try and establish how much of students' time on the iPad outside the classroom is spent on social activities, amusement, and other recreational uses.

1. Do you know how your child spends most of their time on the iPad outside the classroom?
2. Do you regularly check your child's iPad for inappropriate content? Please comment.

Questions to try and establish how the cost of the iPad has had an impact on your household budget

1. Do you know consider a tablet to be a necessary item for your child's second level education?
2. What other hardware does your child have access to at home? E.g. PC desktop/laptop.

Wellbeing
1. Do you feel that using the iPad has had any impact on your child's physical or mental health?