Digital Portfolios and the Learning Process: A report on a pilot program

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This article reports on a pilot program within the early childhood section of a Private School in the UAE. In using digital portfolios to communicate and share student progress with parents and student, monitoring of student progress is deemed to be more effective. In this project, the portfolio demonstrated evidence of applying learning skills required for both developing and mastery levels. The findings of this research project indicate significant improvement in student achievement and that teachers found these portfolios to be a valuable tool in monitoring student behaviour and communicating future educational goals to parents, administrators, and other teachers.

Introduction

At the beginning of each academic year in the focal School of this article, students undertake diagnostic assessments to understand their current abilities in terms of their academic, social and physical skills. The school's expected requirement for collecting evidence of achievement, (to show student's understanding towards concepts that are taught in class), was predominantly in the form of loose leaf documents contained in a student's folder, a type of non-digital portfolio.

With the move to its new location, the school developed a new strategic plan and within that plan was a strong focus on using ICT in the classroom. Initially, students were exposed more towards learning games and writing on digital whiteboards, rather than targeted concepts they were learning in class. Recently students at kindergarten grade level were provided with a minicomputer lab to address the basic skills in ICT. On the other hand, teaching students at this age requires learning through manipulative and hands on activities. It is during this process of the learning cycle, that the question of how well the child has demonstrated attainment of the learning outcomes is raised. This is normally demonstrated by the collection and analysis of the evidence of the student's progress and achievement against his/her goals.

The manual non-digital student portfolio was a trend at that time. It may be effective in terms of parents receiving a booklet at the end of the year of their child's best work. However, it was not considered as a track of formative assessment as it showed no scale of the skills and targets or was able to show the capability of the student's achieving a particular concept taught independently or with guidance.

Assessment of young children is an ongoing process which includes identifying, collecting, describing, interpreting and applying classroom-based evidence of early learning in order to make informed instructional decisions. This evidence may include records of children's

conversations, their drawings and constructions, as well as photographs of and anecdotal notes describing their behaviours.

Documenting student learning, a preliminary stage in the assessment process, focuses on identifying, collecting and describing the evidence of learning in an objective, non-judgmental manner. Teachers of young children should take the time to identify the learning goals, collect records of language and work samples, and then carefully describe and review the evidence with colleagues. Documentation of children's learning should be directly linked to a set of clearly defined learning goals. Furthermore, given that our students' native language is Arabic, the documentation/assessment process should consist of materials that are culturally and linguistically appropriate, especially when using such materials to assess English language learners. In addition, when using assessment data to inform the instruction of all young children, which includes English language learners as well as children with disabilities, teachers must use multiple age-appropriate methods over time, and link them to the common core standards (as the school follows the American curriculum).

The children of today are exposed to a plethora of information and communication technologies, as an essential and natural part of their daily life. This starts from a very early age. As they grow, they are expected to become active not only within their own local communities but also with the global community. Technology creates ever more versatile possibilities for acquisition and creation of information, self-expression, and for communication and interaction with other people locally, nationally and worldwide.

At this Private School, a class of 25 students with the age group of 5-6 years old piloted the use of a digital portfolio program for one term before it was rolled out across other Kindergarten classes. The Seesaw program was chosen because it allowed the students to share their work and encourages individual reflection and peers/parent feedback. Seesaw became a place not only where student work can be stored, but where teachers, peers and parents can provide encouragement, constructive criticism, and suggestions for improvement. Teachers had the opportunity to review any comments before they are posted to ensure that feedback was constructive and appropriate.

The Use of Digital Portfolios
The best way to introduce technology into schools is unclear. Educating children using 'computers as a vehicle to improve learning' or to 'give technology to teachers first' is the choice. There is no evidence to prescribe which of these is the correct answer.

However, it is clear that technology itself is not the answer to all of today's educational problems. The power of technology will be seen in its connection with educational improvement initiatives. Schools must first rethink their missions and structure, starting with the needs of the students and a set of instructional principles *and pedagogies*, before they can understand the way technology may help them.

The piloting of the Seesaw Digital Portfolio program is part of the school's growing agenda on supporting teachers to use 21st century pedagogies to drive student learning. Using the findings from this pilot program will help the school make informed decisions. The use of the digital

portfolio is a powerful method of monitoring student development in any given area and provides teachers and parents with an invaluable record of achievement.

Advantages and Disadvantages of Digital Portfolios

There are a number of key advantages to learners, educational establishments and educational bodies associated with the introduction of e-portfolios. The Scottish Qualifications Authority (SQA) has identified a number of these (McAlpine, 2004), which are leading the SQA towards the introduction of e-portfolios as a means of enhancing our assessment. Some of these advantages include:

- *Increasing the validity of the assessment* by allowing more forms of evidence to be incorporated. This raises the quality of our assessment practices and ensures that we are indeed giving accurate results and feedback to students. Non-traditional forms of evidence gathering – such as audio or video logs; records of computer interaction, or communication and dialogue – can also be held in a digital portfolio, providing a richer and more valid collection of evidence. Improving the validity of assessment should be a key requirement in any reform.
- *Increasing the accessibility of the assessment* by allowing recording forms (such as video or audio material) to be easily incorporated, so that students who have additional requirements can easily provide evidence in an appropriate medium.
- *Increasing the reliability of verification.* Verifiers can see the same record of achievement as the original assessor, as they can have easy access to the whole portfolio, taking away barriers in transportation and storage. Storage issues are a common problem with existing manual portfolios, and candidates who have difficulty with record keeping.
- *Improving the assessment process*, in that a digital format is both an efficient storage system and a good method of managing data gathering. Furthermore, search and retrieval functionality for large or complex portfolios far exceeds anything that could be developed for a paper-based system. Additionally, the workflow process can be managed online – eliminating the need for maintaining secondary logs of process data.
- *Speeding up the moderation process.* Electronic transfer is far quicker than the transfer of paper-based materials. As the evidence is already collated in one place, the use of e-portfolios would afford an opportunity to review the evidence much more quickly than in the current system.

It should be noted that these advantages might not always work cumulatively. The increase in validity associated with the greater variety of media in which evidence can be stored may make for less uniform entities – which may challenge the reliability of the assessment, and also the management process.

It is noted thus far that there are significant advantages for the assessment system in introducing digital portfolios. Beyond assessment, e-portfolios are also considered important tools for developing the learning process. McAlpine, (2005) identified a number of findings related to the introduction of e-portfolios within a school setting that resonates with the school's action research project. These include:

- The digital portfolio process uncovers strengths and weaknesses for growth and development.
- Teachers would be more inclined to use it in their classrooms.

- Digital portfolio process would open a whole new world to teachers.
- Digital portfolio helps a teacher develop technology skills.
- It helps a teacher reflect on learning.
- Teachers can pass knowledge onto students and other teachers.
- It makes technology more interesting, motivating and accessible.
- The digital portfolio process allows for a wide range of learning styles to be showcased, the possibilities are endless!

Using Portfolios for data gathering and organizing student learning
Portfolio assessment and performance-based education are methods by which schools can restructure and use technology in a meaningful way. Portfolios can be described as collections of a student's work over time. It can be organized so that improvement or growth can be observed. Like an album of photographs where a child's physical development can be observed, an academic portfolio displays a student's growth and development in areas such as science, mathematics, or writing. Portfolios can inspire students and teachers to reflect upon the teaching and learning process. (Irvine and Barlow, 1998) The validity and reliability of classroom assessment is increased when students are involved in collecting evidence of learning. The collections are more likely to be more complete and comprehensive than if teachers alone collect evidence of learning (Davies & Le Mahieu, 2000). Students will start to be engaged and interested in collecting the evidence for their digital portfolio, as they feel proud of their achievement and want to exhibit. Additionally, this increases the potential for instructionally relevant understandings of learning. Teachers will employ a wide range of techniques to collect evidence of student learning over time. In addition, when teachers have the evidence of an unachieved concept, this evidence will guide the teacher and the student to the flaws to overcome in order to reach to the level of achievement required. When evidence is collected from three different sources over time, trends and patterns can become apparent; this process has a history of use in the social sciences and is called triangulation.

Moreover, digital portfolios are not used as formative assessment tools for teachers and children only. Over the course of several years, they come to mean much more to the children, to the teachers and to the families. In addition, it fulfils an effective role including children and families for whom English is an additional language. Portfolios have become literacy tools of engagement, empowerment, interaction and communication, connecting the child and family between home and kindergarten, and later home, kindergarten and school.

Students' sense of quality in performance and expectations of their own performance are increased as a result of their engagement in the assessment process. When students are involved in their learning and assessment, they have opportunities to share their learning with others whose opinions they care about. An audience gives purpose and creates a sense of responsibility for the learning that increases the authenticity of the task.

Research Aims
This research discusses the effect of the digital portfolio and the possibility of it being a valuable tool in evaluating a student's progress and performance at the Private School. In addition, the research seeks to understand how the digital portfolios, in the hands of teachers, could be used to enhance the teaching-learning process, and to combine current theories of evaluation with emerging technologies.

Implementation & Findings of the Seesaw Program

After receiving the approval from the school principal on piloting the Seesaw program for a class in KG2, the class list was created, and invitations were sent to the parents to join the program. The program gave the chance for the parents to be involved in monitoring their children's progress and application of the concepts. Moreover, it gave the chance for the parent to give their own comment of their children's work and progress. This kind of involvement increased the parent's inquiry about the student's work, plus it gave them the chance to learn the method of teaching and the tools that were used in teaching their children.

Student pictures along with a caption stating the learning intention, and the feedback of the teacher related to different subjects taught in class, were uploaded and addressed directly to the account that was shared with each parent.

There was evidence that the digital portfolio process at the school engaged the student in the process of reflection. Even in previous years, when the school was using the manual portfolios, students showed that they had the ownership of their work and they wanted always to showcase their work. Students were so keen at all times to make sure that the teacher is taking evidences of their work. The drawback in using the manual portfolios, was that parents were not involved with their children's work until the end of the year. Additionally, portfolios should not stand alone and be the only assessment source or classroom tool. They should be combined with all the other components already occurring in the classroom and school-wide setting that help meet each student's individual needs.

After piloting the program, and with an encouraging feedback from all the parents, teachers across the Kindergarten department were happy with the outcomes. Teachers found it very effective in involving parents with their children's day-to-day work. Following are some of the parents' feedback:

> Parent 1: *"Seesaw is a wonderful application that has kept me up to date on my daughter's progress. It is a great means of interactive communication between parent and teacher and has bridged the gap between home and school. By simply being informed about what my daughter is learning in class and how she is going about understanding new concepts, it provides me with a better idea about where to support and where to extend if necessary. Being a part of this pilot program has been a pleasure and one that I know every parent would appreciate. There is no better feeling than being provided a window into our own children's learning journey".*

On the other hand, teachers were so excited to start using it in their classrooms. Some of the teachers were able to provide the following feedback:

> Teacher 1: *"Seesaw is a wonderful application. I started using it this year. It makes it easy for teacher to deliver differentiated assignments to specific students. Parents can quickly and easily see the work students are producing and view teacher's feedback - as well as leave their own comments, encouraging students to do their best. Teachers can control Parents likes, comments, and editing these comments as well to be suitable for the student's performance. The teacher to allow moderation must approve all comments. Overall, this is a neat, flexible way to manage student work, either for individual teachers or school wide."*
>
> Teacher 2: *"As a teacher, I do strongly support any application or strategy that enable me to share my students' work with their parents as well as keep them engaged in the learning process that takes place every single day inside the classroom. However, few parents are still not interested in such technical communication; I can touch that from the number of responses I got after posting a group work picture shared with quite few number of parents, they prefer to receive a hard copy of their own child's work.*

On the other hand, there are a fair number of parents who really enjoyed this way of keeping in touch with their children's progress; they are so keen to see more pictures and to comment on it. This type of parents might lead me to a pressure point if two days passed without publishing any item on Seesaw whereas the teacher's time is very tight considering meetings, duties, PDs, planning etc."
Teacher 3: "Seesaw is an excellent tool to enhance learning and boost communication between teachers, students and parents. It keeps parents well updated about their students learning process. I have started using Seesaw one year ago on a trial basis with few numbers of parents only. But I found it great! Seesaw offers opportunity to the teacher to control all his/her students' comments and contributions by activating the option of "Teacher's Approval" which encourages students to submit fruitful information.

Seesaw allows students to be creative, reflective learners. Students enjoyed reviewing their journals and talking with others about the work they had accomplished. Furthermore, Seesaw enabled the teacher to store the students' work to be used later in data analysis and lesson planning. Furthermore, Seesaw made the teacher's communication with parents easier and more effective as parents were immediately notified when their child's work was uploaded to Seesaw. I feel Seesaw is a useful tool to increase student ownership of their learning.

The child friendly use of this program encouraged the student to help the teacher collect different evidence to celebrate their achievement. Students took the ownership of their own work. They would make sure to apply the concepts taught and required in class, self-assess their understanding and application, and then make sure that their achievement was recorded.

Seesaw was applied after almost a month from the start of the academic year. As the students began to understand the sharing nature of the program, they wanted to do their best work to put on Seesaw. Students became very aware of each and every skill they needed to work on and were aware of the goals they needed to achieve in order to improve their skills.

For the teacher, the program helped in keeping track of the many formative assessment tasks for each learning attention the students were assessed upon. This gave the teacher a wider picture about each student's level and the evidence of the student's application of different concepts.

Future applications can be seen for use in higher grade levels. As students develop more independent learning skills, they will be able to access their own account; upload their writings and work samples and even their homework. Given the various standards of learning for each subject, the student will be able to compare the quality of work submitted against those standards.

Conclusion
It is clear that the use of digital portfolios is an important vehicle for communicating with parents in real time. The Private School trial demonstrates students' engagement rises and, in time, allows for a shift in pedagogy; from teacher centred to students taking control of their own learning.

This action research project also reveals future prospects for the Private School in using digital portfolios. Working with specialist teachers in a cross subject learning approach will connect teachers together as they focus on each individual student. Classroom teachers could work with physical education teachers to document a student's physical and emotional development. Art and music teachers can work together with reading teachers to present information on a

student's communication skills. Students themselves can assemble and present their own perspectives on what they have learned. The use of Internet technology has enhanced the educational process for students at the Private School as they present and reflect on what they have learned, as they are learning.

References

Davies, A. & Le Mahieu, P (2000) Assessment for Learning: Reconsidering Portfolios and Research Evidence Retrieved on 28 May, 2017 from http://electronicportfolios.org/afl/Davies%26LeMahieu.pdf

Irvine, S. and Barlow, J. (1998). The digital portfolio in education: an innovative learning and assessment tool. *Journal of Information Technology for Teacher Education*, 7(3), pp.321-330.

McAlpine, M. (2005). E-portfolios and Digital Identity: some issues for discussion. *E-Learning*, 2(4), p.378.

Yusuf, J. & Tuisawau, P. (2011). Student Attitudes Towards the use of e-Portfolios: Experiences from The University of the South Pacific. *Malaysian Journal of Educational Technology, 11*(4), pp. 31-41.