

## **Using Electronic Portfolios to Foster Communication in K-12 Classrooms**

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An electronic portfolio (EP) is a digital container capable of storing visual and auditory content including text, images, video and sound. EPs may also be learning tools not only because they organize content but also because they are designed to support a variety of pedagogical processes including reflecting on one's own learning and providing feedback to peers to stimulate their own reflections (Abrami & Barrett 2005; Wade, Abrami & Sclater 2005). This reflection process is a key element in students' learning and effective communication between students is an important part of this process. EPs have three broad purposes: process, presentation, and assessment. For assessment purposes, EPs can be used as examples of students' authentic activity and are especially useful for formative purposes, showing progress over time; while presentation portfolios are used to represent students' most important works. This chapter will focus on the process piece of EPs as this is the most central to the themes of classroom communications addressed in this book.

EPs may be designed as *process (or learning) portfolios* supporting how users learn through embedded structures and strategies. A process EP is a purposeful collection of student work that tells the story of a student's effort, progress and/or achievement in one or more areas (Arter & Spandel 1992; MacIsaac & Jackson 1994). Process portfolios are personal learning management tools. They are meant to encourage individual improvement, personal growth and development, and a commitment to life-long learning. The authors are especially interested in the use of EPs as process portfolios to support learning.

Process EPs are gaining in popularity for multiple reasons. They provide multimedia display and assessment possibilities for school and work contexts allowing the use of a variety of tools to demonstrate and develop understanding—especially advantageous for at-risk children whose competencies may be better reflected through these authentic tasks. At the same time, by engaging these learners, their deficiencies in core competencies such as reading, writing, and general learning skills may be overcome. Process EPs may scaffold attempts at knowledge construction by supporting reflection, refinement, conferencing and other processes of self-regulation, important skills for lifelong learning and learning how to learn. They are superior for cataloguing and organizing learning materials, better illustrating the process of learner development. Many EPs are web-based, so they can also provide remote access encouraging anywhere, anytime learning and easier input from peers, parents, and educators, letting them provide feedback through a single electronic container. In this regard, they may be used to foster communication between teacher-student, student-student, and child-parent throughout the learning process.

### **ePEARL: An Example of an e-Portfolio Tool**

The Centre for the Study of Learning and Performance (CSLP) based at Concordia University in Montreal in collaboration with their partner LEARN<sup>1</sup>, developed a web-based, student-centred electronic portfolio software, entitled ePEARL, electronic Portfolio Encouraging Active Reflective Learning, (<http://grover.concordia.ca/epearl/en/>) that is designed to develop self-regulated learning (Zimmerman 1989, 2000; Zimmerman & Tsikalas 2005), along with improved communication skills in students. Three levels of ePEARL have been designed for use

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<sup>1</sup> LEARN stands for the Leading English Education and Resource Network. See <http://www.learnquebec.ca/en/>

in early elementary (Level 1), late elementary (Level 2) and secondary schools (Level 3). In ePEARL students can: personalize the portfolio; set long and short-term goals; create new work through use of a text editor and audio recorder, or link to digital files created outside of the tool; reflect on work; share work with classmates; provide and receive feedback from teachers, peers and parents; edit work; save work under multiple versions and send work to a presentation portfolio. The artifacts index page offers students and teachers an easy way to store, organize, and track the progress of assignments (Image 1).

ePEARL is designed to promote a student's self-regulated process of learning. The software prompts the creation of general learning goals for a term or year, or for a specific artifact (G); reflection on works in progress or completed works (R); and peer, parent and teacher feedback (C) on the portfolio or on a specific artifact. Teachers may also provide feedback on the student's goal setting and reflection that has occurred within the portfolio. The ePEARL environment guides students through the creation process. The software also offers the ability to attach work completed using other software (A), so it can accommodate any kind of digital work a student creates, including podcasts, videos, powerpoint files, scanned images or photographs of paper-based work.

Before work is created, students are encouraged to set their goals for the assignment, and may attach learning logs, evaluation rubrics and study plans to keep track of their learning process as it takes place. After the creation of work, sharing with peers or teachers is encouraged so that students may solicit feedback on drafts of work. Students may also reflect on their performance and strategies, and to use these to adjust their goals for the next work. Sharing with peers is prompted in the reflection screen (Image 2). Once students have completed a version of an assignment they are asked if they would like to share this piece with classmates to obtain

feedback. Teachers have automatic access to view and enter feedback in all of their students' ePEARLs.

The Presentation folder within ePEARL is where students collect selected important artifacts. This provides a cumulative area where artifacts are carried over to the next level of the software and acts as an archive of stored work during a student's educational career. The selection process allows students to reflect on why they feel an artifact belongs in their presentation folder, its relationship to other work, and on their own advancements.

### **Facilitating Communication Through Design**

An EP, by definition, is a way to externalize an individual's thought processes and progressions. When beginning an ePEARL entry, the student is walked through a creation process that models a certain level of expert practice including forethought, performance, and self-reflection. Some cognitive scaffolding is made explicit at this stage, enabling students to easily address aspects or initiate practices that they may not realize are necessary or beneficial to their learning process such as reflecting on both the final content *and* the process. As these skills and practices are adopted and internalized by the learner, this guided step-by-step scaffolding can be skipped. ePEARL is designed to give the individual student a view of his/her own progress. By the end of the guided process, and possibly after several drafts, the learner is ready to make a selection of works he/she would like to display. Reflection is also actively encouraged at this point by urging learners to consider the merits of the final work, of the process and of the contribution made to the student's awareness of him/herself as a learner.

Particular features in ePEARL are intended to facilitate communication between individuals. The software allows students in the same class or school or across schools, to

comment on works in each other's portfolios. Students receiving the comments are encouraged to revise their work, incorporating those comments they feel are helpful. Teachers are also able to comment on goals and strategies selected by the student, and thus help monitor and adjust individual student progress and understanding. Apart from facilitating the communication between teacher and students, this feature also pedagogically supports the teacher by clearly identifying where a teacher's comment may be inserted and can provide the greatest help. ePEARL was also designed to encourage scholastic communication between students and their parents. Given the learning environment is not limited to the classroom, practices at home are central to a student's academic success. The ePEARL software encourages parents to participate in their child's learning process, by commenting on individual work as well as on the portfolio as a whole.

### **Communicating Effectively Through ePEARL's Feedback Feature**

The feedback feature in ePEARL facilitates ongoing communication between students, teachers and parents through the learning process. Feedback is only effective, however, if offered consistently and constructively. From our experience and observations, quality feedback is not easy to provide, and has to be supported and facilitated through the software with examples and prompts for teachers, students and parents to be used successfully.

It is sometimes difficult for teachers to give comments relevant to the students' goals, work or reflections. We have identified three important key factors to keep in mind when giving a student feedback. First, the teacher is setting an example, as well as a standard for his or her classroom. Students will learn from their teacher how to provide constructive feedback. Teachers can ask themselves several questions when providing comments or feedback on students'

portfolios. For example: “Did the student reach his/her goal?”, “Why?/Why not?”, “How effective are his/her strategies?”, “Are these strategies well linked to the task goal?” Second, teachers can refer students to prompts used in the class (such as “two to glow and one to grow” or “Have you thought about...”), resources available in the classroom (such as posters or handouts), or to other students that can help them. Third, users should refer to resources available within the software. ePEARL offers built-in, “just-in-time” help and support videos for teachers, students and parents that may be accessed at any time (Image 3).

Finally, feedback should always begin with a positive remark and be specific. It should also be supported by examples or evidence from the students’ work. It’s important that feedback should not include a mark (grade), which is performance based. A mere number or letter grade does not help students understand why they did or did not do well, and what they should improve on. It is equally important to encourage, but also to support parents in providing comments on their children’s work. Parents may not understand how to provide helpful and positive feedback. Students simply feel encouraged and supported knowing their parents have looked at their work; this is always a good start. In the ePEARL resources page, there is a guide for parents, which directs them in how they can participate in the portfolio process, and offers some guiding questions in providing feedback. All schools and teachers can prepare such resources.

After careful portfolio analysis, we have identified some examples of constructive and non-constructive teacher and student feedback, as well as parent comments (Table 1). As seen in the examples in Table 1, students and parents need guidance in providing comments. Several students will make spelling mistakes and regard this feature as ‘chat’. It is up to the teacher to exemplify the type of feedback they want to see, and discuss ahead of time with students what they expect.

## Lessons Learned

While teachers and their students see great promise in the use of EPs for learning, there is much that remains to be done to ensure this promise is realized. To teach the skills of self-regulation within an EP environment requires commitment, purpose, and strategies on the part of teachers and students. It requires both “will” and “skill”. Although EPs are designed to promote student learning and facilitate classroom communications, the software can’t do this work alone. Teachers need to continually provide modelling and instruction to promote effective goal setting, feedback, and reflecting within the portfolio through structured lessons, discussions, and other classroom activities. Support materials for ePEARL such as job aids, lesson plans, and instructional videos are available to help educators effectively teach these skills.

Although the examples provided in this chapter speak most specifically to classroom practices tailored for teachers working with students in elementary and secondary classrooms, the principles of this electronic portfolio and its use in promoting effective classroom communications can also be applied in a post-secondary setting. Instructors working with students in the college or university setting can use software such as Moodle, blogs, googlepages, and WebCT to facilitate the processes of creating goals, identifying strategies, creating work, revising, providing feedback, and reflecting on one’s work. Although these tools don’t provide the same type of structured guidance as ePEARL does, the instructor can model and provide prompts to students to stimulate the processes of setting goals, sharing work, providing constructive feedback, and reflecting on the learning process.

ePortfolios be particularly useful in larger classes where peer-to-peer interactions prove to be quite minimal or are limited to a vocal minority of students in the course. In such cases, it

may be beneficial to assign students to smaller online discussion groups so they can interact with each other outside of class and keep the dialogue and learning space active on their own time. They can exchange ideas, as well as post assignments to give and receive feedback. This can help to build a greater sense of community among the students and to make the online communication more manageable and personal for the students. Creating some sort of interactive ePortfolio that supports self-regulated learning and aligns with the needs of your course and students is one way to stimulate classroom communication when the structure of the classes make interactive, face-to-face discussions difficult.

Web based EPs provide a valuable platform for extending classroom ‘spaces’ and learning dialogues. By catering to individual student’s learning styles and paces EPs can facilitate engagement with and contributions from all students, particularly those who might not feel confident participating verbally in class discussions or other fast-paced, face-to-face activities. It is important that educators tap in to new technologies and new pedagogies to meet the changing needs of their students and classrooms. Electronic Portfolios can provide a new path to support the development of essential skills and foster new forms of communication for learning inside and beyond the classroom environment.



## References

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Images & Tables

Meg's Portfolio

Home Artifacts Share Personalize Parent Mode

Folder: Science and Tech (All Years)

All Artifacts Languages Science and Tech Social Studies Arts Education

Presentations Moral Studies Physical Ed. Math Personal Devel.

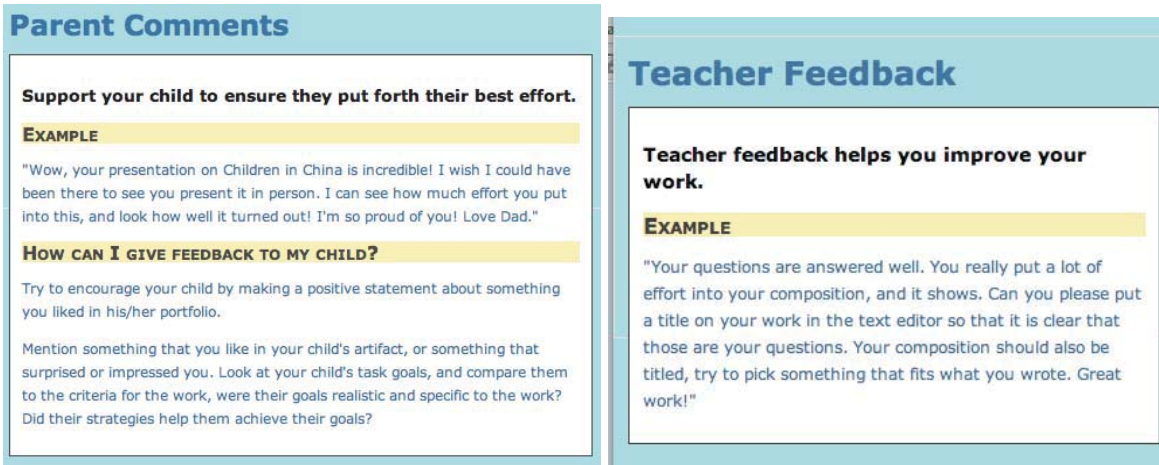
add new artifact printable version delete artifacts to presentation

Title	Folder	Date	A	G	R	C	BAL	CCC	SA	SK	
Colourful Carnations v1	Science and Tech	06/05/07	3	X	X	---	E -	218	M--	---	
Oiseau Lune v1	Science and Tech	07/05/07	1	-	-	---	E -	19-	LS-	---	
French Spelling Bee v1	Science and Tech	07/05/07	1	-	-	---	--	---	---	---	
An Interview with Karla Homolka v1	Science and Tech	07/30/05	1	-	-	---	M -	684	MP-	---	
Crocodylians and Other Reptiles v1	Science and Tech	08/01/06	3	X	X	---	EM	163	MLP	142	
<b>Group work</b>											
Crocodylians and Other Reptiles v2	Science and Tech	08/01/06	2	X	X	TS-	E -	163	M--	---	
-- What about the stars v1	Science and Tech	05/16/08	-	X	-	---	ES	1--	---	---	
-- Recycling: why it's important v1	Science and Tech	05/23/08	-	X	-	---	--	---	---	598	
Health and Well-being Word Find v1	Science and Tech	08/04/06	1	X	X	--P	S -	169	LP-	---	
<b>ISIS Projects</b>											
Nothing to display.											

Image 1: Artifacts index page - Science and technology folder



**Image 2:** Reflection screen - sharing



**Image 3:** Help - Parent Comments and Teacher Feedback

Constructive Feedback	Non-constructive Feedback
What tools can help you reach your goal? Did you reread your work to check for punctuation? (Teacher)	Reading is an important goal! (Teacher)  Keep up the awesome work! (Teacher)

I encourage you to remember your reflection when you start your next project. Making good choices is a good strategy to try. (Teacher)	Blaise, congratulations on completing your first design challenge. Your mark is 55/55. (Teacher)
I think it is great that you are writing letters as your format for your 'zine article. I think you should continue to work on this entry and add some more details. Why did the school board decide to cancel summer vacation? (Teacher)	Sabrina, you did well on the second run. You have a few minor spelling errors to correct. Mark is 53/55 (Teacher)  Great reflection. I hope you enjoyed working on this project! (Teacher)
Punctuation is important when trying to convey your thoughts to your reader Susan. You have noted where you need to improve and that is encouraging. You have self assessed your writing weakness correctly and can now work on improving your writing style. (Parent)	Why is this not being used more. There is nothing in here and the year is almost over. (Parent)
Have thought of getting more info and not talking about Rune escape all the time but it had good pictures (Student)	Nice job on the notes I like it so much it was cool. (Student)
You did nice a good job your capitals where in the right place and punctuation. I liked my feed back from u. (Student)	It looks just like LIA (Student)

**Table 1:** Sample Feedback