Project Title	**:**	Investigating E-portfolio Assessment Literacy Among Adolescent Learners: Portfolio Compilation, Emotional Experiences, and Conceptions of Assessment
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Final Report

by

Principal Investigator

Investigating e-Portfolio assessment literacy among adolescent learners: Portfolio compilation, emotional experiences, and conceptions of assessment

Abstract

Teachers have adopted e-Portfolios for language teaching and assessment for more than two decades. Many researchers have measured the effects of e-Portfolios on students' learning outcomes. However, not much is done to understand how students compile, experience, and perceive the e-Portfolio development process in a naturalistic setting. Against this backdrop, this mixed-methods study aims to fill these voids by exploring how adolescent learners (1) create and compile e-Portfolios, (2) manage emotions throughout the compilation process, and (3) perceive e-Portfolio assessment. The significance of the project is threefold. First, most e-Portfolio-based research has been conducted in tertiary education not in secondary education. Second, the majority of these studies primarily focus on the product of learning more than the process of learning as a result of e-Portfolio applications. Third, researchers tend to examine how teachers learnt and tried out various e-Portfolio systems without investigating how students acquired knowledge, skills, and attitudes in manipulating e-Portfolios. Four research instruments were adopted, including e-Portfolio contents, learner reflective journals, teacher and student interviews, and an online survey. Both qualitative (i.e. content analysis) and quantitative methods (i.e. descriptive statistics) were adopted to analyse multiple data sets. The findings indicated that the informants generally had positive feelings and attitudes towards their e-Portfolio journeys although they found certain e-Portfolio tasks prescriptive. Yet, some remained sceptical about their privacy when using e-Portfolios because they did not want to share their reflective pieces online. The report ends with a discussion on classroom implications concerning how to teach and research e-Portfolios effectively.

Keywords: e-Portfolio, language assessment literacy, portfolio compilation, emotion, conceptions, adolescent learners

Introduction

In an era of technology, e-Portfolios have become commonplace in first and second language (L2) education. E-portfolios are derived from their print counterparts, which were first utilised to substitute paper-and-pen exit exams at university (Weigle, 2007). With the arrival of the World Wide Web, e-Portfolios were considered an emerging form of learning tool in the mid-1990s, especially in the tertiary education (Al Kahtani, 1999). An e-Portfolio, aka a digital portfolio, a web-based portfolio, or an online portfolio is defined as an electronic dossier to celebrate a student's growth, efforts, and achievements with multimodal artefacts. Likewise, e-Portfolio assessment refers to an iterative and feedback-rich process, where students adopt self-, peer-, teacher, and online feedback to close their learning gaps (Yancey, 2016).

Over the past two decades, there has been no shortage of empirical studies to corroborate the effectiveness of e-Portfolios, namely improved writing accuracy, increased confidence for learning, and gains in exam results (Handel et al., 2020). Despite this positive evidence, these studies mainly focused on the learning product rather than the learning process, namely portfolio compilation (Butler, 2006). They also investigated the cognitive and linguistic aspects of e-Portfolio assessment more than its affective dimension, like emotional experiences (Barrett, 2007). More importantly, there is an obvious lack of tried-and-tested instruments to measure adolescent students' conceptions of e-Portfolio assessment. In Hong Kong, the Education Bureau has incessantly promoted e-learning in primary and secondary language education. Notwithstanding this well-intentioned initiative, researchers have found that students' computer literacy levels, accessibility to infrastructure, and opportunities to improve language learning via Web 2.0 tools are still a cause for concern (Kong et al. 2014). To date, scholars remain unclear about how secondary-level school learners manage to compile, experience, and perceive e-Portfolio assessment in a wider L2 context. To fill these research gaps, this current study investigates e-Portfolio assessment literacy among Hong Kong adolescent learners by looking into a three-pronged theoretical framework, namely portfolio compilation, emotional experiences, and conceptions of assessment. These tripartite aspects of e-Portfolio assessment represent a much-needed knowledge base on student assessment literacy in the Hong Kong language education landscape.

Review of literature

Portfolio compilation

The portfolio compilation process involves creating, evidencing, connecting, and reflecting (Yancey, 2023). A student creates his/her e-portfolio with a software tool and attaches a range of multigenre and multimodal evidence to validate their learning outcomes. She then connects various hyperlinks and artefacts coherently for meaningful reflection. Such an iterative portfolio process is said to represent students' language learning holistically, since students can document their growth and trajectories to achieve multiple purposes, namely programme placement or university admission tests. In the U.S., Acker and Halasek (2008) reported how a university and two high schools collaboratively adopted e-Portfolio assessment to facilitate the transition of students' writing development from high school to university. The findings indicated that the students could manage portfolio compilation effectively although high school and college teachers had different expectations in both instructional contexts. In Taiwan, Hung (2012) revealed that there was a positive impact of e-Portfolio on university-level student learning. However, when it came to managing e-Portfolios, selected students were resistant to engage in technology and had limited computer literacy to handle portfolio compilation matters.

Aydin (2014) investigated EFL writers' attitudes and perceptions towards e-Portfolio use in Turkey. 101 university-level participants considered that portfolio compilation via Facebook could help them improve reading and writing, grammar, and research skills. Nevertheless, a majority of the participants felt that using Facebook to compile their portfolios was tiring, tedious, and time-consuming. They also found that it was somewhat challenging to give peer feedback and to do pre-writing tasks on Facebook interface. Siu (2013) conducted a large-scale e-Portfolio study in three courses involving 1,500 undergraduate students in one Hong Kong university. After the study, the students were provided with a user-friendly e-Portfolio platform (Google Sites) to compile their coursework with technical support. E-portfolio content and compilation logistics were simplified to facilitate learning. Despite these benefits, the researcher observed that the original e-portfolio platform (Blackboard) was overloaded; user manual needed constant update; and students were reluctant to respond to online peer and teacher feedback. Because of this, the portfolio compilation process is not as straightforward as most scholars think. Oftentimes, learners may encounter barriers when they collate their digital artefacts.

Kimball (2005) warned of the deprivation of learner agency in portfolio compilation amid certain e-Portfolio systems. He pinpointed that owing to restrictive customisation of some tools, students were simply downgraded to 'content-providers'. Furthermore, some e-Portfolio platforms lacked a reflective component, so that portfolio compilation merely turned into a record-keeping event. Kotsopoulos et al. (2015) found that 64% of teachers met with unmanageable challenges when coaching Grades 1-3 pupils to navigate their e-portfolios (mainly the complexity of user interface). The survey data revealed that the overall comfort level with technology and use of the web-based learning management system as e-Portfolios was inappropriate for young learners in the study. With these less-than-stellar outcomes, teachers should not take for granted that students can compile their portfolios automatically without a user-friendly software tool. In fact, more has to be done to explore how adolescent learners compile and manage their e-Portfolio artefacts. Scholars can identify what major components are involved in portfolio compilation, which facilitates successful second language teaching and learning.

Emotional experiences

In educational literature, a majority of studies have investigated students' attitudes towards e-Portfolio assessment (Bryant & Chittum, 2013). Of these, they largely focused on whether students became more motivated after joining an e-Portfolio programme. The findings of these studies were generally positive, implying that students took more initiatives in language learning, namely writing (Al-Qallaf & Al-Mutairi, 2016). Despite this, scholars know very little about students' emotional status when they are involved in the e-Portfolio development process,

namely the role of authorship, honesty in reflection, and the relationship between emotions and learning. From print to electronic portfolios, the role of authorship has definitely undergone an enormous paradigm shift. In print portfolios, students almost have a full ownership of their collection of works, whereas in e-Portfolios, students share their learning artefacts publicly. Their portfolio space is co-created by peers, teachers, digital natives, and an immediate community (Yancey, 2015). This new authorship requires students to be computer literate, resilient, daring, and creative. With this in mind, scholars may need more research into students' emotional experiences when they construct their digital identities as e-Portfolio makers (Clark 2010).

Another area to understand students' emotional experiences in e-Portfolios is honesty in reflection. When students self-reflect in print portfolios, they realise that it is almost private unless the reflective pieces are summatively graded by teachers. However, if they reflect candidly in e-Portfolios, they are likely to concern with the issues of privacy, especially when they openly discuss their incompetency online. McGarr and O'Gallchóir (2020) have argued that reflective writing in portfolios could never be authentic, even if students included self-criticisms in their e-Portfolios, because these self-criticisms were strategically disguised by self-enhancement techniques. In order to make assessment criteria transparent to students, pre-vocational training instructors coached students to comply with external criteria instead of engaging them in actual learning. Torrance (2007) coined these test-orientated activities as 'assessment-as-learning', implying that teachers simply used assessment to replace learning. In their scoping review, Wilson et al. (2018) reminded scholars of the issues of privacy and consent when they researched into e-Portfolio assessment with young learners and the vulnerable, whose emotional experiences could be morally distraught and psychologically traumatised.

The relationship between emotions and learning is essential to be explored. Engaging in e-learning, adolescent students need to mobilise multimodal resources, adopt language learning strategies, and resolve inhibiting sociocultural factors (e.g. a conservative school culture), not to mention emotions associated with the digital divide between the well-off and less privileged students with low socio-economic backgrounds (Hockly & Dudeney, 2018). When adolescent students learn a second language, they are likely to experience a plethora of emotions. Since learning, emotions and instruction were closely integrated in e-Portfolios, Hascher (2010) claimed that students' cognition and metacognition were correlated with their emotion developments within a multi-level environment that included peers, teachers, parents, social media, and different e-learning tasks. In their quantitative study, Mega, Ronconi, and De Beni (2014) discovered that students' emotions have influenced their self-regulated learning capacity and levels of motivation, which, in turn, contributed to their academic success. The

researchers further confirmed that positive emotions fostered academic achievements only when they were mediated by self-regulated learning and motivation. In brief, students' emotional experiences play a pivotal part in technology use, because some students are motivated to improve their academic studies via flipped classrooms and mobile learning apps, while others consider e-learning informal, leisurely, and uninspiring owing to their former unpleasant e-learning experience (Hockly, 2016). Simply put, adolescent learners' emotional experiences remain an underexplored, yet intriguing, aspect in e-Portfolio assessment.

Conceptions of e-Portfolio assessment

While most e-Portfolio studies investigate the measurement of learning outcomes, there is another line of research examining students' conceptions of portfolio assessment. Bader et al. (2019) have investigated 40 Norwegian students' perceptions of formative feedback in writing portfolios. The students' participants were positive about teacher feedback albeit critical. They welcomed peer discussion although they perceived peer feedback less constructive than teacher feedback. Deneen, Brown, and Carless (2018) conducted a survey study about pre-service teachers' conceptions of e-Portfolios as formative assessment and a technological innovation. The findings showed that the participants had positive perceptions towards the technological aspects of e-Portfolios, which enabled them to practice self-regulated learning skills. The participants believed that the formative function of e-Portfolio could improve their GPAs. Using the same survey instrument, Aydin (2014) compared his latest e-Portfolio study with his previous portfolio-keeping study in 2010. He found that the benefits of using Facebook as e-Portfolios increased in terms of mean scores, while its limitations decreased over time. The descriptive statistical data reflected that the students' conceptions of Facebook as e-Portfolios were mostly encouraging.

Besides these questionnaire studies, scholars tend to adapt educational psychology perception scales to measure the impact of e-Portfolios on students' self-regulated learning. Chang et al. (2016) investigated whether using e-Portfolios for reflection enhanced eighth graders' self-regulated learning skills. The researchers adopted two measurement scales, including a sub-scale for reflective performance (5 items) and another scale of self-regulated learning (50 items). The students with high reflective performances demonstrated better self-regulated learning dispositions. Using a pre-test and post-test design, Nicolaidou (2012) examined whether there was a correlation between process-orientated e-Portfolios and fourth graders' writing self-efficacy. The researcher first adopted the Writer Self-Perception Scale to measure the participants' self-efficacy three times throughout the portfolio intervention, and then a student questionnaire as a post-portfolio implementation test. The quantitative data discovered that process-orientated e-Portfolios, which supported goal-setting, reflection, and use of peer/teacher feedback, had positive impacts on the participants' self-efficacy. Baas et al. (2019)

have examined if there was a relationship between motivation (self-regulated learning) and portfolio use (i.e. AfL practice) among 419 Grades 4-6 pupils. The researchers utilised two scales: Student AfL Questionnaire (SAfL-Q) and Children Perceived Use of SRL Inventory (CP-SRLI) via structural equation modeling. The results indicated that portfolios as a learning tool did not enhance motivation. Instead, AfL practice motivated pupils' learning.

Unquestionably, using tried and tested perception scales is trustworthy to survey students' conceptions of assessment. Nonetheless, scholars advocated developing their own instruments to measure students' conceptions in specific educational settings (Brown & Wang 2016). For instance, Cheng and Chau (2009) created and piloted a questionnaire to investigate whether using digital videos could foster self-reflection in an e-Portfolio environment. Similarly, Guo and Yan (2019) observed that there were different versions of validated Students' Conceptions of Assessment Inventory available for use, but they decided to construct a new scale to differentiate whether affective attitudes or instrumental attitudes are linked to formative and summative assessment. To align with the three major constructs of the project, we adapted two well-established yet similar portfolio assessment scales to investigate students' e-Portfolio assessment literacy in Hong Kong English classrooms. Taken together, the following three research questions are designed to guide the current study:

1. How do students compile and manage their e-Portfolios? (Sub-question: What major components are involved in the portfolio compilation process?)
2. What are students' emotional experiences when they perform e-Portfolio assessment activities? (Sub-question: How are students' emotional experiences mediated by individual, institutional, and contextual factors?)
3. What are students' conceptions of e-Portfolio assessment in terms of its purpose, creation, learning goal, artefact, reflection, and attitude?

Methodology

The project adopted an exploratory mixed-methods design, which enabled us to triangulate four different types of data concurrently (Creswell & Clark, 2017). It had two sequential stages of data collection, namely - qualitative data (e-Portfolios, reflective journals, and interviews), and - quantitative data (an online questionnaire). Selected e-Portfolios were analysed by content analysis, and reflective journals and interviews through thematic analysis. The questionnaire was analysed by descriptive statistics. The use of exploratory study design was to develop fundamental understanding of a research agenda before its long-term exploration, which was adolescent learners' e-Portfolio assessment literacy. As to mixed methods approaches, we could enhance the validity, reliability, and trustworthiness of our project data with an unbiased representation of in-depth, contextualised narratives as well as accurate

statistical information (Teddlie & Tashakkori, 2009). The qualitative data in the first part informed items construction and revision of the questionnaire in the second part, which reported the quantitative data. Purposeful sampling was adopted to recruit six participating schools with three selection criteria, including willingness to join the project; eagerness to innovate e-Portfolio assessment; and motivation for aligning learning and assessment via AfL. Invitations were sent out to potential secondary schools via emails. When data collection commenced in June 2022, one secondary school informed us to withdraw from the project with justifications. To date, the number of participating schools was five.

Data collection and analysis

The project adopted four research instruments. We developed a six-part analytical framework to perform content analysis of students' e-Portfolios as the first instrument. The framework aligned with six constructs of a scale extracted from Chang et al.'s (2011) study, which was also the blueprint of our online questionnaire (to be described below; see Appendix A). The six modified dimensions of the analytical framework included: interface, organisation, computer literacy, content, attitude, and reflection. The second instrument was reflective journals. To capture students' lived experience of emotions and language learning, the student informants were asked to compose an A-4 sized journal entry near the end of their e-Portfolio applications in Semester 1, 2022-23.

Concerning the third instrument, we piloted and revised two interview protocols. The above content analysis of students' e-Portfolios served as input for revising the teachers'/students' interview protocols. For the teacher interviews, we focused on the logistics of various school-based e-Portfolio programmes. We asked the five teacher participants how their students created and compiled their e-Portfolios over time, and how their students reacted to portfolio compilation emotionally (see Appendix B). For the student interviews, the teacher informants interviewed their Grades 7-9 students (n=46) about their compilation experience, feelings, benefits, and challenges when constructing e-Portfolios in school. We invited a senior colleague to peer review the two protocols before we piloted them with two secondary school teachers plus three Grade 9 students who did not participate in this project. Each interview lasted around 20 to 30 minutes and was audio-recorded. The informants' first language, Cantonese, was used in the interviews, which were translated and transcribed verbatim for data analysis.

The fourth instrument was the online questionnaire chosen from a review of 26 published scales. After repeated vetting, we selected two scales to accommodate the scope and context of our project. The first one we utilised was a six-dimension, 22-item web-based portfolio assessment scale from Chang et al.'s (2011) study. The six dimensions of the scale comprised portfolio creation; learning goal; artefact; reflection; attitude; and others (i.e. evidence of learning).

Chang et al. (2011) reported that all items had acceptable construct validity (the Kaiser-Meyer-Olkin values of each aspect greater than 0.5) and the scale had a high internal consistency (an overall Cronbach alpha greater than 0.7). The second scale was derived from Ritzhaupt et al.'s (2008) study. This validated instrument, named the Electronic Portfolio Student Perspective Instrument, contained 34 items, each of which was presented in a 5-point Likert scale, namely from strongly disagree to strongly agree. The purpose of this scale was to understand students' use and attitudes of e-Portfolios. After combining two scales into one, we piloted it with 12 Grade 9 learners in a non-participating school. We then invited one expert to review our revised questionnaire and pilot data. The finalised questionnaire was administered one week after each e-Portfolio programme completed.

The following section illustrates how we analysed four data sources, namely students' e-Portfolios, reflective journals, interviews, and questionnaires. First, two approaches to content analysis, (a) directed content analysis and (b) summative content analysis were adopted to analyse 48 e-Portfolios (Hsieh & Shannon, 2005). In (a), we categorised various sections/sub-sections of e-Portfolios as initial codes and then created labels with reference to Chang et al.'s (2011) framework. In (b), we had frequency counts of certain key features and themes, like "colourful template", "easy-to-browse interface", or "easy retrieval of archives" to outline how and what students did to construct their e-Portfolios. Second, we adopted inductive thematic analysis for the reflective journal entries and interview transcripts. Although this approach did not require theoretical considerations, we meticulously followed a six-step analysis process, which included understanding the data, creating initial codes, looking for themes, reviewing the themes, interpreting, and lastly writing up the themes (Braun & Clarke, 2013). Third, the questionnaire data were analysed by descriptive statistics, such as the percent, mean, median, and standard deviation, overlooking the central tendency of student use and attitudes of e-Portfolios in terms of purpose, usefulness, learning goal, reflection, or other pertinent dimensions. Lastly, we obtained research ethics approval from our affiliated university before the project commenced.

Results and discussion

RQ 1: Compilation and management of e-Portfolio artefacts

(Legend: T1 stands for Teacher 1, T2 Teacher 2, S1 School 1, etc. while Teacher 1 works in School 1; Teacher 2 works in School 2, etc.)

To understand how adolescent learners compiled and managed their e-Portfolios, we analysed their e-Portfolios content by way of multimodal artefacts and their focus-group interviews. During the six-month fieldwork period, we collected 48 student e-Portfolio samples from five participating secondary schools (S1 – S5). As said, we adopted a six-part analytical framework

from Chang et al.'s (2010) study. The five teacher informants (T1 – T5) also interviewed their students in eight focus-groups. For the interview data, we performed content analysis. The following sub-sections first reported on a summary of all e-Portfolio artefacts collated from 48 students and then a detailed description of the e-Portfolio compilation process selected from three teacher participant's school.

Interface

A majority of e-Portfolio interfaces was clear and orderly because the participating schools adopted two common LMSs – Google Classroom (T1 – T3 & T5) and Microsoft Teams (T4). All the interfaces were pre-determined by teachers except for T3's school, where students were allowed to modify their templates with colourful banners or graphics. In S2 and S3, the teacher participants had to follow a standardised template set by the English panel chairs. It explained why some student e-Portfolios looked alike in terms of layout and sequence. Hence, the e-Portfolio interfaces we analysed were viewer-friendly owing to their standardised format, intuitive template, and student prior experience (all student participants used Google Classroom at least once before the project).

Organisation

As described in the previous paragraph, the organisation of student e-Portfolios largely followed the template of Google Classroom and Microsoft Teams. Hence, most organisation structures we studied were clear-cut, signposted, and easy for access and retrieval. Student participants agreed that Google Classroom as an e-Portfolio platform facilitated compilation and retrieval of artefacts, which increased learning momentum and promoted constant review of learning. In five participating schools, students' e-Portfolio contents were organised by way of topical themes (theme-based – climate change, COVID-19 economy), language skills (skill-based – reading, writing, & listening), types of tasks (task-based – grammar exercises, collaborative writing, mini project work, etc.)

Content

There was a good balance between language-focused and topic-focused tasks, between close-ended and open-ended assessment tasks, and between reading and writing learning tasks. However, we found that there was more writing than reading/speaking tasks. Composition writing was the most popular task. Only T3 included listening tasks in student e-Portfolios. In other words, the other four schools mostly focused on literacy skills even after in-person teaching assumed. Although most tasks were somewhat mechanical, two students in S3 and one student in S4 included creative content via self-recorded oral presentations and an unconventional storytelling method, respectively. Overall, the content of reviewed e-Portfolios was of high quality.

Computer literacy

The aspect of computer literacy was tricky as some students were relatively proficient in manipulating e-Portfolio platforms, whereas some still struggled with how to upload the correct format of their assignments on Google Classroom (T2's students) and how to use Camscanner to digitalise their handwritten work for submission (T4's students). Another evidence was that some students utilised online tools to complete their e-Portfolio tasks, such as online dictionaries, generative AI tools (ChapGPT), text-editing software (Grammarly), while few students found it demanding to upkeep the basic quality of audio recording (their solo presentations). Overall, the student participants were proficient in handling e-Portfolio tasks and content.

Attitude

Although attitude was considered subjective and hard to measure, some students had a more positive attitude than others in terms of task completion, level of commitment, and goal setting. T1's students checked their writing tasks twice against a 'to-do' list (detailed homework instructions) before submission. T3's students proactively helped their peers to upload an audio file to the e-Portfolio system. T5's students reviewed the set goals by comparing and contrasting their work with assessment criteria. Despite this encouraging evidence, a handful of students remained indifferent when submitting their tasks, including non-compliance with task requirements, late submission, or simply non-submission of assignments due to procrastination.

Reflection

Among 48 e-Portfolios, the five teachers did not explicitly require students to perform any self-assessment or self-reflection tasks. Despite a lack of this metacognitive component, one T2's and one T4's students engaged in reflection by checking on their writing tasks and recorded common errors for future review. When we further inspected student response to teacher feedback on their e-Portfolios, the five teachers mainly asked students to go over their error patterns without requesting follow-up nor providing suggestions for improvement. This *reactive* mode of reflection was frequently identified in our samples but not the proactive mode of reflection, which was almost non-existent.

School 1: Process writing samples

T1 piloted the process writing approach with his Secondary Four students in a series of online lessons. He made use of Jamboard to help students brainstorm, research, discuss and master a challenging written genre – argumentative essay. He provided students with instant and formative e-feedback and required them to make corrections on the following day. Despite

attempting this novel instructional approach, T1 did not encourage students to self-reflect on their interim and final drafts uploaded on their e-Portfolios. We now illustrate an analysis of one T1's student e-Portfolio task, which is about a book presentation video.

Extract 1

No of Artifact	V004
Interface	High viewer friendly. Tidy recording background.
Organisation	Clear organisation. Two clear parts of the speech, the first part is the summary of the book's content, and the second part is lesson learned from the book. The student's use of a straightforward approach to beginning her speech, "Today, I will share an impressive book with you ..." indicates the beginning of the book.
Content	Book presentation video. Clear content. After summarising the book content, the student describes the insight she has gained from the book, which is that no one is perfect. Instead of blaming and escaping weaknesses, people should accept and embrace them. The student is able to relate the insight she learnt from the book to her personal weaknesses, being mediocre at English. She mentions she practices her English every day to overcome her weaknesses. Using the quote from the book, "You believe in yourself; you can do anything." and applying it to the hardships we face.
Computer Literacy	Moderate to high computer literacy. Low volume recording. Higher resolution is suggested.
Attitude	Positive attitude. Clear voice. Some grammatical mistakes. Book contents are clearly summarised. Nice reflection after reading. The students sometimes refer to her script.
Reflection	NA

School 2: Grammar lesson samples

T2 was keen on grammar teaching. Her lockstep and teacher-centred approach in remote teaching resembled her in-person teaching without alterations, requiring very minimal interactions among students. She adopted a drilling approach to prepare her students for forthcoming uniform tests, such as asking them to memorise a vocabulary list in a decontextualised manner. In one focus-group interview, two T2's students said that they often converted print worksheets into electronic versions rather than being asked to compose creative artefacts.

Extract 2

No of Artifact	F006
Interface	High viewer-friendly The interface is consistent and easy to follow. The interface instruction is clearly described, with keywords all capitalised, such as “RED”, making it easy for students to understand and answer questions. Each reading task has an associated cover so that students can quickly understand the topic.
Organisation	Good to excellent All pages are well-arranged, with a clear information structure and title “Reading Explorer” at the top.
Content	Ordinary Skills taught: Reading comprehension The content is straightforward. Students do not need to use their imagination. They simply study the vocabulary items underlined in red, understand, and remember them. Then, they are almost ready to complete the following quiz.
Computer Literacy	Moderate Students know how to fill in correct answers in the appropriate spaces. There is no display of sophisticated computer skills.
Attitude	Negative The student has a negative study attitude and fails to complete the assignment on time.
Reflection	Average (lowest level of reflection) Students are required to revise and correct their assignments. It helps students to reflect on their mistakes, make corrections in time and show improvement.

Schoo1 3: School-based curriculum samples

S3 adopted a school-based approach to language teaching and learning. E-Portfolio artefacts were selected by students (an instance of student-centredness). Portfolio tasks were not limited to reading and writing but also listening and speaking tasks. T3 was good at utilising authentic pedagogical materials and a range of up-to-date learning apps to engage students in learning. Although T3’s students studied in junior secondary (Grade 7), they were able to compile high-quality multimodal artefacts mostly by themselves.

Extract 3

No. of	W006

Artifact	
Interface	Moderate viewer-friendly interface. The worksheet clearly states the question for the online exercise. The student can follow the basic homework requirements.
Organisation	Intuitive. The final product of the unit expects students to write a vivid setting and atmosphere of their characters' first encounter with a mystery and describe an event that lasts only a few minutes. This task was posted at the middle of the final product as an interim checkpoint for students and teachers to check their understanding towards figurative languages, senses writing, and Narrative Points of View (PoV) for storytelling.
Content	Clear instruction Short writing task. Students are required to write 100 words about the setting of their drafted stories. The question clearly states all the requirements. The student also wrote the scene at the beginning of the draft story despite some repetitive words.
Computer Literacy	High. There is no error in the student's homework submission. No wrong file name is found.
Attitude	Somewhat positive. The student has applied what he has learnt from the lessons to his homework. For example, he uses ‘Bang’ to demonstrate that the rubbish bin was knocked over by the wind. Additionally, the sense of touch is used to show how strong the wind is. Despite some mistakes, he does his best in completing the homework assignments.
Reflection	Teacher provides personalised comments for reflection. Some words are capitalised to draw the student’s attention and show him the correct writing style.

RQ 2: Emotional experience of performing e-Portfolio tasks

In this sub-section, we report on students’ emotional experience of performing e-Portfolio tasks by drawing on their reflective journals, focus-group interviews, and Part 5 of the online questionnaire. We analysed 64 valid pieces of journals out of 66. 10 pieces were categorised as “positive”; 21 pieces as “neutral”; 18 pieces as “satisfied”, while eight pieces were labelled as negative-related emotions, such as “annoying”, “bored”, and “sad”. In addition, 43 students said that they would use e-Portfolios for their future study, whereas 10 said no. Despite conducting repeated coding (within and across raters), we found that some entries labelled as “neutral” or “satisfied” could also be considered “positive”. Mutal agreements among us were reached before we finalised the current findings. The breakdown of each emotion description is listed in Table 1.

Table 1: Student informants' emotion description

Perception	Counts	No.
Neutral	21	1,5,6,8,9,17,25,30,31,32,35,36,39,40,45,46,50,51,57,60,66
Satisfied	18	3,10,11,15,19,22,27,28,37,38,41,48,52,54,56,58,63,64
Pleased	1	13
Proud	2	14,48
Thankful	1	16
Happy	2	18,43
Positive	10	20,21,26,33,34,49,53,59,61,65
Annoying	2	23,24
Optimistic	1	29
Okay	1	44
Achieved	1	55
Bored	1	42
Sad	1	43
Negative	4	2,4,7,62

Positive

"*I like to use Good Notes because it is convenient and can help with my revision and homework. If it is not required by the teacher, I think I still use it because its functions are easy to follow, and it is good for my revision*." (Respondent 49)

"*I think doing homework online is great, such as Google Docs. I can change my wordings at any time. It is hard to draw as beautiful as the computer software. I also find it quite helpful for me to study. When I am studying for exams, I want to do some online exercises that help revise the content better. I can type some questions on Google Docs and print them out as a worksheet for myself. Sometimes, when I want to group all my documents, I can use Google Sites. I can decorate my own website and upload my documents on it in order. Then, I can retrieve them easily whenever I want to revise them again*." (Respondent 59)

Neutral

"*Honestly, I think my attitude to using an e-Portfolio is neutral. I accept its existence and have fun by using it, but I am not willing to use it on purpose. On the one hand, I think using an electronic device frequently will cause eye strain, and this makes me anxious when I have to continuously create e-Portfolio artefacts. On the other hand, using an e-Portfolio gives me a sense of nothingness (虛無感). All the files are saved online, so I can't see the physical proof of my efforts. It brings no sense of achievement. If my teacher doesn't insist, I will not use an e-Portfolio for my future study.*" (Respondent 60)

Satisfied

"*I am very satisfied and proud of my e-Portfolio because it is detailed and well-organised. If my teacher won't require me to use e-Portfolio in class, I still use it in my own way and add flash cards or e-books to it. It is because I have a better exam result after using the e-Portfolio method in my secondary school, more satisfied than that in my primary school when I was not using one.*" (Respondent 48)

Negative

"*It's a bit negative for me to feel about e-Portfolios. But I always have a fixed mindset that doing online homework is always a big project since I usually do online homework with Google Docs or Google Slides or even Google Forms. It's a bit stressful or pressurised for me. But I still welcome e-Portfolios for my future study. It's environmentally friendly because we don't need to print out the assignments all the time and what we need is only an electronic device such as smart phones or tablets. Besides, it's more user-friendly to careless people like me because I always forget to bring the handout home, so this can avoid having this problem.*" (Respondent 62)

From the student focus-groups, we organised the data into several categories, including feedback information, learning progress, review opportunities, and a sense of accomplishment. Three students appreciated quick feedback provided by their teachers, i.e. T1, T3, and T4. This summative and formative feedback could help them monitor their learning progress more effectively even when they were off campus. Four students from S1 said that they could review their learning progress by retrieving uploaded artefacts anytime. When engaging in collaborative writing tasks, students could learn from their peers' writing styles. Two students from S4 felt that the design of e-Portfolios enabled students to look back on their work and made corrections although they seldom did so because of a packed study schedule. One T1's and another T3's students could develop a sense of accomplishment as e-Portfolios empowered them to witness their growth and improved performances over time. Except for one T5's student, she was not comfortable with creating video-based artefacts as she felt awkward to view and hear her own voice. She preferred creating text-based artefacts like essay writing. Overall, the interviewees had positive emotion experience when compiling e-Portfolio tasks.

Based upon the questionnaire data, the student participants positively valued the confidentiality of their portfolios (M=4.36/5.00), the usefulness of e-Portfolio artefacts (not just a site to store electronic worksheets; M=4.23/5.00), and impartial marking of their e-Portfolios (M=4.28/5.00). Apparently, they were serious about their e-Portfolio artefacts, academic studies, and summative grading. These data also indicated that they trusted their teachers who

could use the e-Portfolio approach to help them improve language skills. This point was consistent with the above interview data. Nonetheless, some participants had negative sentiments about the following aspects: layout of e-Portfolios (M=3.36/5.00), creation of artefacts (M=3.10/5.00), sharing e-Portfolios with peers (M=2.89/5.00) and increased trust in peers after sharing e-Portfolios (M=2.96/5.00). Neither did the students feel convinced about peer learning nor peer assessment as they were not willing to share their work with one another. It appears that they trusted teacher judgement (formal marking and feedback provision) rather than peer feedback. In sum, the above adolescents' emotional experience was mediated by individual preferences (teacher assessment rather than peer assessment), institutional expectations (artefact creation restricted by stringent coursework requirements/exam syllabus), and contextual factors (continuation of e-Portfolio use owing to its affordances and instructional benefits).

RQ 3: Perceptions of e-Portfolio assessment in specific aspects

This sub-section describes adolescent learners' perceptions of e-Portfolio assessment in terms of its purpose, creation, learning goal, artefact, reflection, and attitude via reflective journals, focus-group interviews, and Part 4 of the online questionnaire. Among 62 valid journal entries out of 66, we did three rounds of frequency count of the students' perceptions of e-Portfolio assessment concerning its advantages and disadvantages. For benefits, we categorised four most popular themes from 96 counts: (1) Easy to organise, locate and review learning materials (n=29); (2) Convenient to track learning progress (n=16); (3) Convenient to communicate and collaborate (n=14); (4) More convenient to use/edit/revise than handwritten texts (n=13). Theme no. 1 was about artefact and reflection. Theme no. 2 was about learning goal. Theme no. 3 was about purpose/attitude and theme no. 4 was about creation and artefact. For limitations, we equally identified four themes from 27 counts, including (1) Network/Wi-Fi connection problems (n=6); (2) Difficult to use (n=2); (3) Parent misunderstanding (n=2); and (4) Harmful to eyesight (n=2). Themes no. 1 and 2 were about creation and artefact. Theme no. 3 was about attitude and theme no. 4 could not be classified as it was about a learner's physical well-being.

Perceptions of benefits

Theme 1: "*OneNote and Google Classroom help me find my learning materials more conveniently. In class, we can see each other documents via a shared screen function on the e-Portfolio platform, because OneNote can synchronise the words my classmates type in.*" (Respondent 28)

Theme 2: "*It helps me organise all the notes, and it helps me find the notes so easily and conveniently when I am doing revision. Furthermore, it is helpful in progress tracking: I can*

see my improvement and weaknesses. There are some problems when I am using it. When I log in the e-Portfolio, I need to spend some time to see where my worksheets have (been) uploaded." (Respondent 17)

Theme 3: "*Using an e-Portfolio brings many benefits. First of all, it helps me easily manage and organise different forms of information, such as texts, pictures, videos, etc. Second, it helps me share and collaborate conveniently, and it allows me to access at anytime from anywhere. Additionally, using an e-Portfolio helps me track my learning progress and reflect on my performance. For example, I use some note-taking apps to keep a record of my learning progress, so that I can monitor my learning schedule and progress better. I can also use these apps to put down my thoughts and reflection, so as to better understand and apply what I've learnt.*" (Respondent 65)

Theme 4: "*It is easy to erase things, undo and copy and paste. These functions are really helpful, but I can't do with a real (piece of) paper. I can also share or submit my project easily with my classmates and teachers. I can also search information on the internet.*" (Respondent 46)

Perceptions of drawbacks

Theme 1: "*Using e-Portfolio allows me to keep track of my study progress and remind myself that it's about time to complete my exercises. It helps to organise my messy notes as it is easier (to manage) my notes online than in the physical format. However, the network connection for it may be the drawback of an e-Portfolio, as sometimes it's hard for my notes on an iPad to sync with my other devices at the same time.*" (Respondent 35)

Theme 2: "*It is not easy to use (a bit complicated), as there are many folders. But when you do revision for exams, you can find the study materials easily in the folder as the apps like OneNote (sums up all materials that I need).*" (Respondent 29)

Theme 3: "*It helps me find more information, but my parents always think I'm playing online games and scold me.*" (Respondent 43)

The interview data were reported in accordance with six key aspects of e-Portfolio assessment. Purpose: Students were generally positive about the formative and summative purposes of e-Portfolio assessment. Unsurprisingly, they were appreciative of the formative aspect of e-Portfolios as opportunities to review and to peer evaluate was unique to them. Creation: Since students were restricted by the coursework requirements, they had less freedom to create different types of e-Portfolio tasks (i.e. audio or video-based assignments). Learning goal: Students felt delighted to set and review learning goals throughout the term though with teacher

guidance. It was because goal setting was not a common practice in their existing curriculum. Artefact: Most interviewees, particularly in S3 and S4, enjoyed the process of compiling multimodal artefacts, such as designing graphics, drafting texts, and making videos for upload. Reflection: Five T2 and T3's students admitted that their teachers neither required them to reflect on their interim drafts/exercises nor graded their reflection pieces. Yet, two T5's students said that they often reviewed their errors and make corrections privately. Attitude: Though not explicitly asked about attitudes, we observed that a majority of students had an open-minded and receptive attitude when they participated in their school-based e-Portfolio programmes. This observation was attested by their commitments to preparing the e-Portfolio tasks in a collegial way.

Lastly, the questionnaire data were consistent with the interview and journal data. In Part 4, a majority of students agreed that the purpose of using e-Portfolios could help to improve their academic performance as well as to keep a running record of their learning progress (Q2, M=3.57/5.00 & Q3, M=3.66/5.00). Also, using e-Portfolios could help most students achieve their learning goals satisfactorily (Q4, M=3.59/5.00) and monitor their set goals continuously even after graduation (Q5, M=3.48/5.00). The students agreed that they had adequate opportunities to create multimedia artefacts (Q6, M=3.78/5.00). Although most students appreciated the role of reflection in e-Portfolios, they realised that they were seldom asked to do so and would not benefit from this good practice (Q9, M=3.36/5.00). Despite its usefulness, most students agreed that creating and maintaining an e-Portfolio was indeed time-consuming (Q12, M=3.16/5.00). The students had a supportive attitude towards e-Portfolios as they considered them a better alternative to evaluate students' English learning (Q16, M=3.49/5.00).

Conclusions and Recommendations

First, student participants' compilation and management of e-Portfolio contents were largely encouraging. The multiple data sets showed that the participants were able to create, compile, curate and reflect upon their artefacts appropriately although a few students still struggled with the issues of formatting and uploading the right artefacts to the e-Portfolio platform. In addition, the students could organise their artefacts and learning materials neatly as the e-Portfolio templates were pre-designed by their teachers. Their attitude about e-Portfolio compilation ranged from highly committed to barely motivated because some students neither complied with task requirements nor submitted e-Portfolio work to teachers. Albeit an integral part of e-Portfolios, reflection remained mostly underperformed owing to a packed and exam-orientated curriculum, individual learning preferences, and a conservative school culture. Second, speaking of students' emotional experience, they had mixed feelings towards the e-Portfolio development journey, such as positive, neutral, satisfied, negative, annoyed, etc. Based upon the qualitative and quantitative data, selected students did enjoy the technological aspects of e-

Portfolios, including prompt feedback provision, easy online review mechanisms plus a sense of achievement although they might not get accustomed to extra workload, new learner identity, and possible invasion of privacy. Some participants did not feel convinced about sharing e-Portfolios with their classmates probably due to the fact that they had complete trust in teachers' judgement and their impartial marking. Despite a mild degree of scepticism, most students in this study had a positive outlook on participating in various types of e-Portfolio activities. Third, concerning students' perceptions of e-Portfolio assessment, they were mostly positive about the formative and summative purposes of assessment although they valued the latter more, namely teacher judgement, summative grading, supervisory teacher feedback, etc. Nonetheless, some participants regarded e-Portfolios as a learning companion, which helped them to review learning progress regularly, achieve goals satisfactorily, and collaborate with peers on group writing tasks more easily. Notwithstanding their favourable perceptions, they experienced challenges when using e-Portfolios, like unstable Wi-Fi connection, compatibility problems of operating systems (i.e. iOS vs. Android), and parent misunderstanding. Overall, the adolescent participants, except for a few, were liberal about and tolerant of utilising e-Portfolios as a better alternative to evaluate their language learning in the Hong Kong classroom setting.

In sum, we have three recommendations for teachers and researchers for consideration if they plan to attempt the e-Portfolio approach in their work contexts. For compilation, teachers may consider providing students with more learner choice or autonomy to choose what and how their artefacts are created and then uploaded so that student learning motivation may increase accordingly. Likewise, teachers may consider designing stylistically diverse and culturally inclusive tasks to make e-Portfolio learning available to all (an instance of equity in education). To protect students' emotional experience like self-esteem and privacy, teachers may adopt a high security e-Portfolio software tool so that students feel safe to compile and reflect on their work. More importantly, teachers need to brief students about the purpose, benefits, and challenges of constructing an e-Portfolio to let them cognisant of their role, contribution, and potential risks they encounter if any. As to conceptions of assessment, teachers ensure that students should develop a balanced view of both formative and summative purposes of e-Portfolio assessment. The former purpose helps students to review, reflect, and improve progressively, whereas the latter purpose helps them to summarise, evaluate, and assemble what has been learnt. In this study, participants have strong faith in summative grading by teachers but not in formative peer assessment co-produced with fellow classmates. In addition, teachers may consider utilising student e-Portfolio results as assessment data to inform student learning (fulfilment of summative purpose) as well as to fine-tune their instruction (fulfilment of formative purpose). Regardless of these suggestions, teachers are advised to venture into a context-specific portfolio journey not for students but *with* students in order to promote their e-Portfolio assessment literacy.

(Words: 7,633)

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Appendix A: Questionnaire

Part 1 Basic Information 基本資料

Name 姓名：
Age 年齡：
Gender 性別：
Grade 年級：
Class 班別：

Part 2 Previous Experiences 過往經歷

Please share with us your previous experiences. 請根據你的實際經歷回答下列問題。

1. Do you use a digital device (e.g. computers, smart phones, or tablets) frequently? 你是否經常使用電子設備（如電腦，智能手機或平板電腦）？ [ ] Yes, every day. 是，每天使用。 [ ] Yes, several days in a week, but not every day. 是，每週會使用幾天，但不是每天都用。 [ ] No, a few hours in a week. 不是，每週僅使用幾小時。 [ ] No, seldom. 不是，幾乎不用。
2. Did you have any experience of creating an e-Portfolio before this course？此前你是否使用過電子檔案？
3. Before this course, have you published on any of the following Internet sources？你此前是否在以下渠道發布過內容？ [ ] Personal websites or blogs 個人網站或博客 [ ] Photo websites (e.g. Facebook, Instagram) 圖片網站（如臉書，IG） [ ] Video websites (e.g. YouTube, TikTok) 視頻網站（如 YouTube，抖音） [ ] Podcasts 播客 [ ] None of the above 以上均沒有
4. I am confident to use following applications: 我能夠熟練運用以下應用程序： [ ] Messaging apps (e.g. WhatsApp, Line, WeChat, email) 信息類應用（如 WhatsApp，Line，微信，電子郵件） [ ] Online Shopping apps (e.g. Amazon, Taobao) 在綫購物類應用（如亞馬遜，淘寶） [ ] Streaming apps (e.g. Netflix, Disney+) 視頻播放類應用 （如奈飛，迪士尼+） [ ] Online Video Game apps 網絡遊戲類應用 [ ] Academic apps (e.g. Grammarly, dictionary) 學術類應用 (如 Grammarly，詞典) [ ] None of the above 以上均沒有
5. Please tick if you have the following computer skill(s) 請勾選你擁有的技能： [ ] Information search 信息搜索

[ ] Word processing 文字處理
[ ] Graphical design 圖形設計
[ ] Presentation software 演示軟件
[ ] HTML 網頁語言
[ ] Video editing 視頻編輯
[ ] Audio editing 音頻編輯
[ ] Digital photography 電子攝影
[ ] None of the above 以上均沒有

* Items in Parts 3, 4, and 5 are designed for a Likert scale of 5, with "1" denoting strongly disagree and "5" denoting strongly agree.

Part 3 e-Portfolio Compilation 檔案彙編

There are **12** questions in Part 3. In this part, we would like to know how you create, compile, and manage your e-Portfolio. 第三部分包含 **12** 項題目。我們想瞭解你如何創建、編寫和管理自己的電子檔案。

1. e-Portfolio expectations were clearly stated in this course. 課程中清晰地描述了理想的電子檔案是什麼樣子。
2. e-Portfolio procedures were clearly stated in this course. 課程中清晰地描述了編寫電子檔案的過程。
3. I could create artefacts in my e-Portfolio independently. 我能獨立在電子檔案中創建作品。
4. I could compile and manage the e-Portfolio content proficiently. 我能熟練編寫和管理電子檔案的內容。
5. I often talked about e-Portfolio requirements with my classmates. 我經常與同學討論電子檔案。
6. I would use an e-Portfolio to showcase my work to my friends. 我會用電子檔案向朋友們展示自己的學習成果。
7. I would use an e-Portfolio to showcase my work to my family. 我會用電子檔案向家人展示自己的學習成果。
8. I consider teacher feedback on my e-Portfolio as constructive criticism. 我把老師對電子檔案的評語作為建設性意見。
9. I learn from my mistakes through e-Portfolio compilation. 編寫電子檔案幫助我從錯誤中學習。
10. I plan to visit the e-Portfolios of others in the future. 我計劃將來查看其他人的電子檔案。
11. I will update my e-Portfolio in the future even if it does not become a course requirement. 即使課程沒有要求，我將來也會更新我的電子檔案。
12. I plan to continue to upgrade my e-Portfolio for life-long learning. 我打算持續改進我的電子檔案以作終生學習之用。

Part 4 Conceptions of Assessment 評估觀念

There are **16** questions in Part 4. In this part, we would like to know your conceptions of e-Portfolio assessment in terms of purpose, creation, learning goal, artefact, reflection, and attitude. 第四部分包含 16 項題目。我們想從目的、創建、學習目標、作品、反思和態度等方面**,** 瞭解你對電子檔案評估的看法。

1. My purpose of using an e-Portfolio is to improve my academic performance. 我使用電子檔案是爲了提升學業表現。(purpose)
2. My purpose of using an e-Portfolio is to monitor my skills (e.g. word processing) and knowledge (e.g. English grammar) development. 我將電子檔案作爲一種記錄自己技能提升（如處理文字）和知識積纍（如英文語法）的方式。(purpose)
3. Using an e-Portfolio in this course assists the teacher to better assess my knowledge. 在本課程中使用電子檔案讓老師能更好地評估我的知識。(purpose)
4. I use my e-Portfolio to reach my learning goals, such as developing my skills (e.g. word processing) and knowledge. 我用電子檔案達成學習目標，例如培養技能（如處理文字）和積纍知識（如英文語法）。(learning goal)
5. My e-Portfolio helped me fulfill my learning goal continuously. 電子檔案幫助我不斷達成各個階段的學習目標。(learning goal)
6. I have the opportunity to create different types of multimedia artefacts (e.g. video clips, audio, or photos) in my e-Portfolio. 我有機會在自己的電子檔案中添加各種多媒體作品（如視頻，音頻或照片）。(artefact)
7. I have fun in creating multimedia artefacts in my e-Portfolios. 製作多媒體電子檔案給我帶來了樂趣。(artefact)
8. My e-Portfolio assisted me to reflect on my goals and accomplishments. 電子檔案有助於我反思學習目標和成果。(reflection)
9. The use of e-Portfolios helped me in understanding and reflecting on my learning progress. 使用電子檔案能幫助我反思自己的學習進程。(reflection)
10. Reading the e-Portfolios of others enriched my understanding and reflection on the learning process. 閱讀其他人的電子檔案幫助我更好地理解和反思學習過程。(reflection)
11. To create and maintain an e-Portfolio in the course was easier than I expected. 使用電子檔案比我預想得更容易。(creation)
12. The process of creating my e-Portfolio was not time-consuming. 創建電子檔案的過程並沒有花費我太多時間。(creation)
13. The use of e-Portfolios enhanced my study attitude to learn. 使用電子檔案培養了我良好的學習態度。(attitude)

14. I benefited from browsing my classmates' e-Portfolios. 閱讀同學們的電子檔案讓我受益。(attitude)
15. Browsing my classmates' e-Portfolios would be a valuable learning experience. 閱讀同學們的電子檔案是一種寶貴的學習經歷. (attitude)
16. My attitude towards an e-Portfolio is positive, because it is a better way for teachers to assess my knowledge than a multiple-choice or essay test. 我對電子檔案持積極態度，因爲與多選測驗題或作文考試相比，電子檔案是更好的知識評估方式。(attitude)

Part 5 Emotional Experiences 情感體驗

There are **17** questions in Part 5. In this part, please share your emotional experiences when you engage in the e-Portfolio assessment process, and how your emotional experiences are mediated by individual, institutional, and contextual factors. 第 5 部分包含 **17** 項題目。請分享你在電子檔案評估過程中的情感體驗**,** 以及個人、學校和環境因素如何影響你的情感體驗。

1. I like the layout of my e-Portfolio. 我喜歡電子檔案的佈局。
2. I like creating my e-Portfolio. 我喜歡編寫電子檔案。
3. I feel easy to use my e-Portfolio with a good access to the Internet. 如果有穩定快速的網絡，我覺得電子檔案就會更容易使用。
4. I value the integration of e-Portfolios in the course. 我認爲在課程中融入電子檔案十分有價值。
5. My e-Portfolio helps me to communicate better with my classmates. 電子檔案幫助我更好地與同學交流。
6. My e-Portfolio helps me to communicate more effectively with my teacher. 電子檔案幫助我更有效地與老師溝通。
7. Compared to other courses without e-Portfolio use, I feel more connected with students in this course. 與不采用電子檔案的課程相比，我覺得自己與本課程中的同學聯係更緊密。
8. I like sharing my e-Portfolio with my classmates. 我喜歡與同學們分享我的電子檔案。
9. I am more willing to ask questions and share comments after I read my classmates' e-Portfolios. 閱讀了同學的電子檔案之後，我提出問題和分享觀點的意願更強烈了。
10. My teacher gets to know me better than teachers in other courses because I shared my e-Portfolio with him/her. 本課的老師比其它課的老師更瞭解我，因為我跟他/她分享了我的電子檔案。
11. Because we share our e-Portfolios, I feel an increased level of trust towards my classmates in the course. 因爲分享了彼此的電子檔案，我感覺更加信任此課程中的同學。
12. Sharing my e-Portfolio with other classmates helps me feel like I am part of a community. 與同學分享我的電子檔案讓我感覺自己是集體中的一員。

13. I feel comfortable with an e-Portfolio to be graded by teachers in a course. 我不介意老師在課程中對我的電子檔案進行評分。
14. I feel comfortable with an e-Portfolio to be part of the non-graded assignment in a course. 我不介意把電子檔案作為課程中不評分作業的一部分。
15. I hope the confidentiality of my e-Portfolio can be ensured. 我希望我的電子檔案可以確保良好的私密性。
16. I hope my e-Portfolio will be "useful work" – instead of a sheer collection of "electronic worksheets". 我希望自己的電子檔案可以"學以致用" —— 而不是一堆"電子功課紙"。
17. I hope assessment of my e-Portfolio could be objective and without errors in judgement. 我希望對電子檔案的評估能保持客觀，不會出現誤判。

Part 6 Open-ended Questions 開放式問題

There are **4** questions in Part 6. Please give your answers in either English or Chinese. 第 6 部分包 **4** 項題目。請使用英文或中文作答。

1. What is your understanding of an e-Portfolio? What is it used for? How did you use it? 你認爲電子檔案是什麼？它有什麼用途？你又是如何使用它的？(conceptions)
2. Did you get support(s) when you were creating your e-Portfolio (e.g. extra reading materials, conference with teachers, relevant hyperlinks)? If any, please describe one episode when you get support. 在使用電子檔案的過程中，你是否獲得了幫助和支持？如有，請擇一場景舉例説明。
3. What benefit(s) and drawback(s) did you experience while keeping your e-Portfolio in the course? 在本課程中使用電子檔案，給你帶來了什麼益處或不便？(compilations)
4. Do you like or dislike using an e-Portfolio? Please state the reason(s). 你喜歡/不喜歡電子檔案嗎？請詳述原因。(emotions)

Appendix B: Interview Guide for Adolescent Students

1. What is the theme of your e-portfolio?
2. Can you briefly describe how you create and compile your e-portfolio?
3. Which aspect(s) do you like most about your e-portfolio?
4. What are the most enjoyable moments throughout your portfolio compilation?
5. What are the most challenging moments throughout your portfolio compilation?
6. What are your emotions when you observe growth, efforts, or achievements in your e-portfolio? Do you have any particular thoughts you want to share with me?
7. How do you think about your contributions to the e-portfolio works? Do you have a sense of achievement, a sense of belonging, or a sense of satisfaction?
8. Finally, tell me what difficulties you have come across when you engage in various portfolio activities, namely your personal beliefs, motivation, time constraint, support from teachers, etc.