

Transforming the library: Applying multiple assessment methodologies to library instruction and planning

The Washington State University Vancouver Library has been involved in assessment of the library services, space, collection and instruction this fall in order to serve our growing campus and to plan for development and expansion. We have conducted focus groups to aid in the creation of a web survey, looked at the seating patterns within the library, and took photos of the study habits of students across campus. We have also been involved in the creation and assessment of the use of electronic portfolios as a means to evaluate student learning. As the data is being analyzed from all of these methodologies, we have chosen to focus this paper on the electronic portfolio assessment project because it is the most unusual of the methodologies and the one most relevant to library instruction.

Portfolios have long been used by artists and writers to showcase their best work and, more recently, have been used in education as a way for students to exhibit their accomplishments and to reflect on their learning (Lorenzo & Ittelson, 2005). With the advent of technology and the burgeoning interest in more evidenced-based practices, electronic portfolios (ePortfolios) are being used for a wider variety of reasons and in many different arenas. However, there are some commonalities and these can be found in the National Learning Infrastructure Initiative's definition of an electronic portfolio. They describe an ePortfolio as a collection of diverse evidence of what a person or organization has learned over time. An ePortfolio also includes an element of reflection and is designed for one or more audiences for a particular purpose (Barrett, 2004). With that particular audience or purpose in mind, it is the author who selects the work and writes the reflection for the portfolio.

In education, portfolio use has spanned the grades from k-12 and into master's programs as a process for learning and as a means to present best work at a program's end. Use increased through the late 1980's and 90's especially in teacher training programs, engineering, library science, school and public administration, and vocational studies (Brown, 2002). Most recently portfolios are growing in use in general education

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programs in higher education and are proving to be a useful way to document learning experiences and competencies in business, nursing and architecture (Lorenzo & Ittelson, 2005).

Two trends in the late nineties impacted ePortfolio development. One was the widespread use of technology and elearning and the other was an increasing pressure by policy makers for accountability in education. Searching for methods of accountability and assessment that also enhance a student's learning experience, educators have been turning to ePortfolios. They are discovering that the ePortfolio can provide an authentic assessment of the learning experience by documenting the interactions between the instructor and the student as well as display the artifacts that the student selects as their best work.

ePortfolio use is becoming more complex and varied as educators become more familiar with the technology available to them. As Brown points out, ePortfolios are being used as capstone experiences to showcase student's best work, as learning portfolios to document growth (Brown, 2002), as program assessment and as complex learning management systems (Lorenzo & Ittelson, 2005). The ePortfolio in use at Washington State University Vancouver contains features from each of these areas; however, this paper will only deal with the aspect related to program review for learning outcomes. More specifically, this paper will look at the use of an ePortfolio assessment tool, the Learning Goal Matrix, for assessment of the campus information literacy outcomes.

Using ePortfolios for assessment of information literacy outcomes is an innovation. With the increased interest in accountability, as noted above, librarians, like other educators, have been experimenting with more authentic methods of assessing the impact of library instruction on student learning. Of these methods, the ones most closely related to assessment of information literacy outcomes are citation analysis studies (Hovde, 1999; Ursin et al., 2004; Wang, 2006; Yu et al., 2006) and portfolio assessments of credit bearing research skills courses. None of these, however, combine the methodology used with the overall outcomes of program assessment like the one that is being implemented at WSU Vancouver. While most citation analysis studies do focus on

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program assessment, they do not involve student selection of artifacts and reflection on the work, which are the key components of an ePortfolio. In addition, most of these studies are unable to assess the full range of information literacy, particularly the ability to design effective search strategies and to use information ethically and legally. On the other hand, the few portfolio studies reported in the literature (Fourie & van Niekerk, 1999; Snavely & Wright, 2003) have tried to address the full range of information literacy components. These studies, however, were based on portfolios where the purpose of assessment was a course grade for the student. The WSU Vancouver General Education Learning Goal Matrix is a unique component of the ePortfolio in its combination of portfolio elements, information literacy outcomes, and program assessment.

WSU Vancouver, as a regional campus of Washington State University, was an upper division and graduate only institution until recently. The Washington State Legislature, in 2005, charged the campus with the goal of admitting 200 first-year students in the Fall of 2006. During the planning period, the Lower Division Planning Committee developed a new general education program based on six University Learning Goals, which were being written concurrently (WSU Vancouver). There was a commitment to use the opportunity of a new program to increase student engagement and to bring more cohesion to each student's educational experience.

Three aspects of the new General Education Program relevant to this paper are the university learning goals, which includes information literacy; the use of an ePortfolio to enhance program cohesion and student engagement; and the ePortfolio emphasis on program assessment. Librarians, along with other faculty, wrote the information literacy goal based on the ACRL Information Literacy Competency Standards (ACRL, 2006). Inclusion, in this way, has brought a campus-wide prominence to the importance of information literacy and has established information literacy as a fundamental factor to university program success.

Since the use of an ePortfolio in the new General Education program was already being discussed, the Lower Division Planning Committee requested that an assessment tool be included. This tool would be used as an integral part of the program to measure

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progress for each student in each of the six learning goals. The ePortfolio was developed by a faculty/staff committee and chaired by a librarian. After the committee considered several products, looked at the timeline for development, and the capacity for future customization, it was decided the open source system of OSP through Sakai was the best fit.

As per the committee recommendation, the OSP software package came with a developed matrix/reflection tool that could be adapted for use in program assessment for student learning of the university learning goals. Students will interact with this tool three times during their education at WSU Vancouver, corresponding to their enrollment in the three required one-credit Learning Goal courses. This will allow for the longitudinal study of progress of each student and of the general education program. Implementation of this Matrix tool took place in the Fall of 2006 and evaluation is in progress.

The Learning Goal Matrix (see illustration 1) allows students to add two pieces of evidence for each learning goal. Students choose evidence from course work, co-curricular activities or work experiences. For a student activity that does not result in an artifact which can be stored in the Matrix, the ePortfolio provides a form for students to use. This encourages students to use evidence from a wider variety of activities. Once evidence is added to the Matrix, students then reflect on each piece of evidence by answering the question “how does the work you chose demonstrate your progress toward meeting this criterion?”. (see illustration 2) Finally, students reflect on how each goal integrates with their personal educational and career goals by answering the question “How has your understanding of your educational, career, and/or personal goals changed as a result of your work in meeting this criterion?”. (see illustration 3) Over the course of a student’s career at WSU Vancouver, the Matrix is filled out as a final project in three required general education courses. The courses are taken during the beginning, middle, and end of each student’s educational experience.

Illustration 1

OSP : GE303, Sp07 : GenEd Learning Goal Matrix - Mozilla Firefox

File Edit View Go Bookmarks Tools Help

http://wsu.van.rsmart.com/portal/site/0596DBF484B43887D5B78DFA1D3:

Criteria	GE 101/301	GE 303	GE 401
Critical Thinking	Locked	Ready	Locked
Information Literacy and Communication	Locked	Ready	Locked
Quantitative and Symbolic Reasoning	Locked	Ready	Locked
Self in Society	Locked	Ready	Locked
Specialty	Locked	Ready	Locked
Integration	Locked	Ready	Locked
TBA	Locked	Locked	Locked
TBA	Locked	Locked	Locked

Legend

- Ready (Green)
- Pending (Yellow)
- Completed (Blue)
- Locked (Purple)

Done

Illustration 2

OSP : GE303, Sp07 : GenEd Learning Goal Matrix - Mozilla Firefox

File Edit View Go Bookmarks Tools Help

http://wsu.van.rsmart.com/portal/site/0596DBF484B43887D5B78DFA1D3:

Select Evidence

Select your evidence for this expectation by using the drop-down box below.
Describe the context in which you created this evidence.

Arial 1 (8 pt) B I U S x₂ x²

pictures.doc

pictures.doc

Reflection

How does the work you chose demonstrate your progress toward meeting the criterion of Critical Thinking?

Arial 1 (8 pt) B I U S x₂ x²

pictures.doc

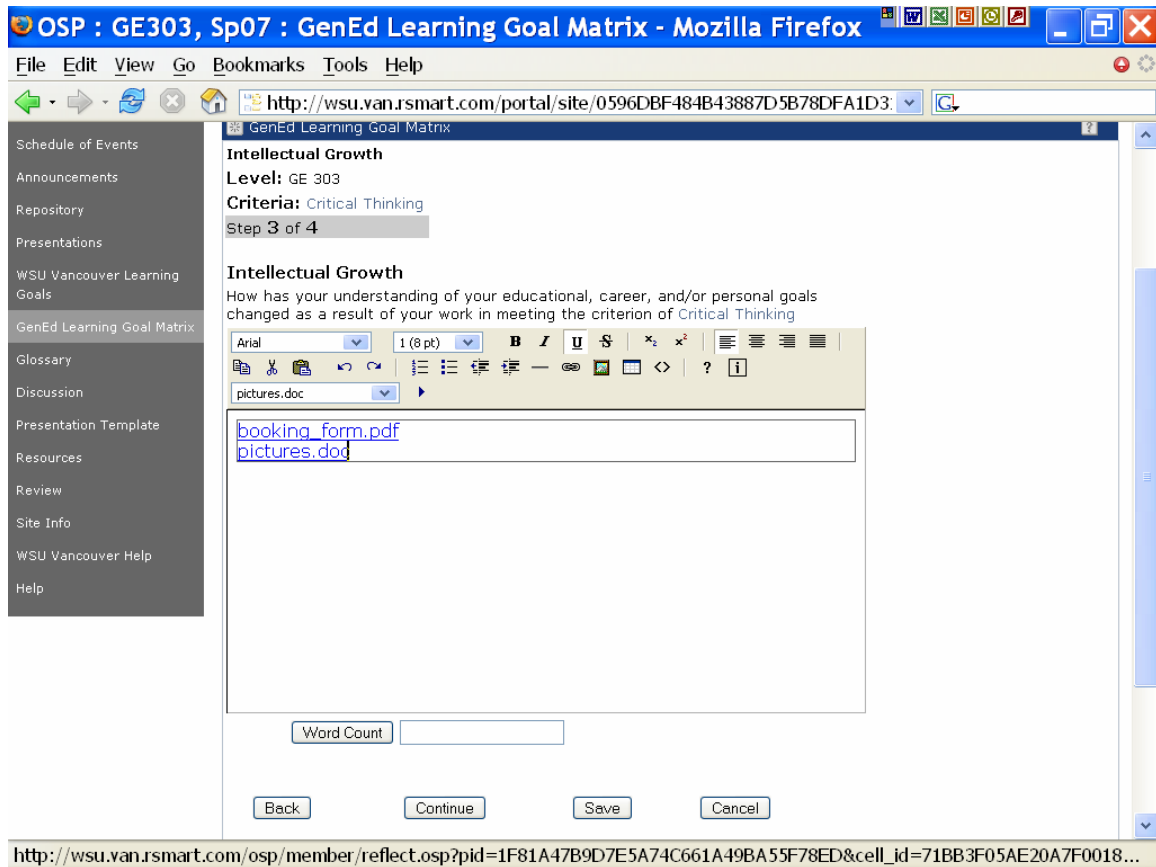
pictures.doc

http://wsu.van.rsmart.com/osp/member/reflect.osp?pid=1F81A47B9D7E5A74C661A49BA55F78ED&cell_id=71BB3F05AE20A7F0018...

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Illustration 3



Faculty who teach these courses insure that the students complete the project but do not assess for program success. Program assessment is done by a campus committee that created rubrics (see Appendix) for assessing the learning in each of the outcomes and recruited faculty to perform the rating. Student work is rated for each rubric point on a scale of one to six within three major categories: emerging, developing, and integrating. It was hypothesized that entry-level students would most likely score in the emerging category whereas seniors, if the program were successful, would score in the integrating category. The program assessment of all of the learning outcomes in the first ePortfolios for fall semester was implemented in December and the results are being analyzed at the time this paper is being written.

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Although the raters' scores are currently being analyzed, some very preliminary results are available at this time. Mean scores for 25 portfolios have been analyzed according to three variables. (Standard deviations are within acceptable range.) In information literacy, entry-level students scored a 2.07 while transfer students scored a 2.65. Female students scored slightly below their male counterparts (2.35 vs 2.41) and Caucasian students scored a 2.45 as compared to the 2.20 of non-Caucasian students (Probst, 2007). It is the impression of the two librarian raters that the original hypothesis regarding low entry-level student scores was correct, although the students scored at the high end of the emerging category. It was surprising that junior transfer students did not, overall, score that much higher than the entry-level students.

After going through this process for the first time, both instructors and raters have discovered some of the strengths and weaknesses of this assessment mode. The first problem was simply lack of time. With the very short implementation time, many instructors did not get trained on the ePortfolio and the Matrix until a few days before classes began. This meant that the instructors were learning how to use the technology as they taught the course and were essentially acting as beta testers for the technology. From the instructors' viewpoint, it took much more class time than expected to get students to understand the purpose of the Matrix and to get them comfortable with the process of evidence collection and reflection. It was also difficult for instructors to find a way to provide feedback that would help students write appropriate reflections without coaching them on "correct" answers. Finally, this first semester presented some campus organizational challenges that impacted student attitudes about the ePortfolio courses and the Learning Goal Matrix.

Instructors did note some of the benefits of using the ePortfolio Matrix. Students who were enrolled in more than one general education course started to see how their courses and co-curricular activities were overlapping to help them create a whole out of their educational experiences. Some students commented, after doing the Matrix, that they suddenly saw that there was more to a college education than the content of individual courses and working on the Matrix helped them to finally understand what the program at WSU Vancouver was trying to accomplish.

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The librarians who served on the rating committee also identified problems to be solved before the next rating sessions. They agree that time for additional training would have improved their experience as raters. All of the raters were trained in two sessions. The first session was instruction in the technology involved in the process and the second was on the use of the rubrics. After reading through the rubrics and exemplar samples, the raters participated in a normalizing exercise. Each portfolio was assessed by at least two people. Twenty-five of the ePortfolios needed a third rater indicating a very different interpretation of the rubrics by the faculty involved and the need for more normalizing activities for the raters.

The librarian raters note that students might have scored higher in information literacy had there been a clearer understanding about what type of artifacts to place in each of the specific cells. Some artifacts placed in the cells of other goals might have been better examples in the information literacy category. The students might also have scored higher if they had made better use of the reflection tool indicating how the artifact demonstrated information literacy. It was unclear if this was due to a lack of understanding on the part of the student or simply a lack of taking that part of the process seriously.

Based on the instructors' and raters' feedback, changes were implemented before the beginning of Spring semester to address concerns expressed during the Fall. The biggest changes took place within the Learning Goal course. It was redesigned to allow more class time to discuss and complete the Matrix. In addition, a more concerted effort was made to have other courses interact with the ePortfolio so that students would have a greater variety of artifacts to choose from when looking for evidence. In conjunction with this, the use of forms to document student learning was restricted to the more complex and informative forms that supplied evidence that could stand up to the rating system. Instructors' feel more confident about teaching the technology now that they have gained experience with it and it has been made less frustrating since a few technology bugs were worked out. Finally, the campus is getting more experience with the new general education program so the difficulties that contributed to student confusion have been lessened.

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The future procedure for ePortfolio assessment at WSU Vancouver will look different from this seminal process. Over the summer, as the General Education committee continues to work out issues with the Learning Goal classes and the way they conduct assessment, the librarians will analyze the Communication and Information Literacy artifacts in all ePortfolios. It is expected that the analysis of the information literacy artifacts will indicate adjustments that can be made in information literacy instruction to improve learning. In the Fall, student learning will be evaluated again on the second level of the matrices anticipating progress in all of the learning outcomes, including information literacy.

Finding authentic methods to assess student learning is a process that has been undergoing change since before the first exams at Oxford in 1858. Recently, this search has become more vigorous due to the increasing pressures for accountability in education. The use of the ePortfolio to document student learning and the use of rubrics for assessment are spreading throughout educational institutions. This facilitates the development of a continuous feedback loop for program improvement. It is the expectation that, as Barrett (2004) suggests an assessment of this nature will serve the needs of the students and the institution. It follows Barrett's three pillars of assessment in that, the tasks to assess skills are clearly defined within the rubrics; the process for analysis of data will give clear indication where we can make improvements in the General Education program; and the system is congruent with the philosophy of the institution.

The WSU Vancouver eportfolio assessment project is exciting because it has included, from the beginning, an information literacy goal and has involved librarians in all aspects of planning and implementation. As with every new program, it will be some time before the impact of this project can be understood and all necessary improvements are made. However, this level of commitment to assessing student learning, and responding to that assessment by program improvement will only strengthen the institution and reinforce the centrality of student learning in this institution's mission.

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Appendix: Communication and Information Literacy Rubric

Below are the definitions for each of the three major categorical anchors:

- **Emerging:** Exhibits limited/minimal recognition or identification of appropriate tools, theories, or problems.
- **Developing:** Demonstrates recognition of contexts and implications; provides analysis; selects appropriate theories or tools to approach problem; thoughtful and systematic exploration of alternatives.
- **Integrating:** Demonstrates application of knowledge to real world situations; provides synthesis of bodies of knowledge; evidence of transference (application of knowledge to other contexts); draws appropriate inferences with justification.

Information in parentheses denotes Information Literacy (IL) and Communication (C) performance criteria listed in the GE Learning Outcomes that are being assessed.

1. Determines the extent, type, and context of information needed to address a problem, question, or work assignment. (IL1; C1)

Emerging	Developing	Integrating
1 <input type="checkbox"/> 2 <input type="checkbox"/>	3 <input type="checkbox"/> 4 <input type="checkbox"/>	5 <input type="checkbox"/> 6 <input type="checkbox"/>
Draws primarily from anecdotal or personal experience.	Considers multiple types of information needed and multiple perspectives.	Considers and evaluates underlying biases and values of multiple sources of information.

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2. Designs an effective search strategy using multiple sources such as computer, print and other people. (IL2)

Emerging		Developing		Integrating	
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
<p>Goes directly to search tool (search engine, library database, person) without thinking about how the toolsearch technique will shape what types of information is found.</p> <p>Develops search strategies using basic keywords.</p> <p>Relies primarily upon one potential source (e.g., search engine, library database, directory, or person) to retrieve information.</p>		<p>Applies some thought to choosing a variety of contextually appropriate tools to the type of information sought.</p> <p>Develops search strategies using and continually refining keywords and synonyms.</p> <p>Demonstrates some knowledge of appropriate search logic (e.g., Boolean logic, field searching, limiters, etc.).</p>		<p>Demonstrates an understanding of how tool selection determines information found; evaluates and incorporates less traditional avenues to advantage.</p> <p>Develops effective search strategies using appropriately focused keywords, synonyms, and subject headings.</p> <p>Demonstrates proficient use of contextually appropriate search logic (Boolean logic, field searching, limiters, etc).</p>	

3. Manages and organizes information and communication technologies effectively and efficiently. (IL3; C3; C4)

Emerging		Developing		Integrating	
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
<p>Little or no understanding of how to record and manage information and its sources (e.g., typically requires numerous attempts to retrieve information).</p> <p>Only considers one communication technology (e.g., web or Powerpoint).</p>		<p>Demonstrates some organizational skill at managing information from multiple sources.</p> <p>Considers multiple potential communication technologies.</p>		<p>Accurately and efficiently manages information and its sources.</p> <p>Evaluates the implications of technology and media selection for organizing and communicating information.</p>	

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4. Assesses credibility and applicability (e.g., pertinence, validity) of information. (IL4)

Emerging		Developing		Integrating	
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
<p>Accepts information without question (e.g., quotes sources without comment or evaluation).</p> <p>Unable to determine if the original information need has been satisfied.</p>		<p>Articulates and/or applies basic evaluation criteria to information and sources.</p> <p>Determines if original information need has been satisfied or if additional information is needed.</p>		<p>Clearly articulates and applies evaluation criteria to both the information and the sources (e.g., differentiates between and uses primary and secondary sources).</p> <p>Recognizes applicability of information to other domains.</p>	

5. Uses information effectively, ethically, and legally to accomplish a purpose. (IL5; IL6)

Emerging		Developing		Integrating	
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
<p>Uses information without referencing the source of that information or without abiding by established etiquette, institutional policies, or legal regulations related to the use of that information.</p> <p>Uses sources out of context.</p> <p>Fails to acknowledge or distorts opposing viewpoints.</p> <p>Relies heavily on quotes.</p> <p>Makes multiple errors when citing sources.</p>		<p>Acknowledges the source of information and uses it in ways that comply with established etiquette, institutional policies, and/or legal regulations related to the use of that information.</p> <p>Demonstrates some understanding of how context is important when using sources to support arguments.</p> <p>Acknowledges opposing viewpoints.</p> <p>Uses more paraphrasing than quotes.</p> <p>Makes minimal errors when citing sources.</p>		<p>Demonstrates a thorough understanding of the established etiquette, institutional policies and/or legal regulations related to the use of that information.</p> <p>Respects the context and integrity of sources of information.</p> <p>Integrates opposing viewpoints into broader contexts.</p> <p>Integrates quotes and paraphrases appropriately to formulate an argument.</p> <p>Makes no errors when citing sources.</p>	

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6. Uses communication medium (e.g., visual, written, graphic, audio, oral) and technology (from simple to advanced) to express concepts, propositions, and beliefs in a coherent, concise, and technically correct form. (C2; C3; C4; C5)

Emerging	Developing	Integrating
1 <input type="checkbox"/> 2 <input type="checkbox"/>	3 <input type="checkbox"/> 4 <input type="checkbox"/>	5 <input type="checkbox"/> 6 <input type="checkbox"/>
<p>Uses language in writing and presenting without considering the audience.</p> <p>Selects inappropriate communication medium or technology to express ideas.</p> <p>Expresses concepts, propositions, and beliefs with minimal clarity</p>	<p>Differentiates between colloquial and formal communication strategies.</p> <p>Chooses appropriate communication medium or technology for the intended purpose and audience.</p> <p>Employs sufficient clarity and organization to communicate intended concepts, propositions, and beliefs.</p>	<p>Demonstrates sophisticated use of communication strategies.</p> <p>Choice of communication medium or technology adds to (rather than detracts from) the content of the presentation.</p> <p>Consistently expresses concepts, propositions, and beliefs in a clear and concise manner.</p>

7. Follows social norms for individual behavior and group interactions, which includes listening actively. (C6; C7)

Emerging	Developing	Integrating
1 <input type="checkbox"/> 2 <input type="checkbox"/>	3 <input type="checkbox"/> 4 <input type="checkbox"/>	5 <input type="checkbox"/> 6 <input type="checkbox"/>
<p>Primarily recognizes and values own opinions and viewpoints (e.g., interrupts or ignores others when they speak).</p> <p>Resists constructive feedback.</p> <p>Avoids obligation to group.</p>	<p>Voices own opinion and allows others to make their viewpoints heard.</p> <p>Considers constructive feedback.</p> <p>Meets obligation to group.</p>	<p>Allows others to voice opinions and integrates those opinions into future comments.</p> <p>Monitors self presentation and self-edits, when needed.</p> <p>Makes use of constructive feedback.</p> <p>Exceeds obligations to group.</p>

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