Embedding Information Literacy into EDFN A348: STEAM in the Context of Alaska 2014 Partnership-Mini-Grant Proposal

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Embedding Information Literacy into the Curriculum
2014 Partnership-Mini-Grant Proposal

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Description of Course:

This undergraduate course is designed to provide students with a deep understanding of science, technology, engineering, arts and mathematics (STEAM) in the context of Alaska. Students will engage in discussion regarding the significance of educational connections between STEAM disciplines and the preservation of language, place and culture across rural Alaska. Through an inquiry approach centered on the implementation of information literacy skills, students will explore an issue germane to the Alaska context.

Rationale:

The state of Alaska is home to 20 different Native cultural groups (Barnhardt, 2001). Although each of these groups is unique, across their cultural values exists a common ethos of resilience and innovation deeply rooted in the thoughtful management of natural resources. At present time, Alaskans face challenges to balance the preservation of culture, place and indigenous languages while carefully managing natural resources. From the economic and
cultural standpoints, both of these challenges require thoughtful attention and strategic planning. The education of the next generation of thinkers and innovators is an essential component of strategic planning. Through education, it is possible to prepare the next generation of Alaskans to face these challenges.

EDFN A348 (STEAM in the Context of Alaska) provides a perfect academic environment for the teaching and implementation of information literacy. As a result of this course, future teachers will be able to scaffold their students' understanding of the connections between the health of the environment, culture and the retention of ancestral knowledge to inform western perspectives. The course objectives and student learning outcomes for EDFN A348 embed information literacy through student centered inquiry projects. The course instructors will model pedagogies that foster information literacy.

**Previous Experience with Information Literacy**

My educational experience includes 18 years as a middle and high school teacher. I have always recognized information literacy skills as a tool to empower students to access and critique information. During the first week of school I contacted the school librarian and scheduled a session for my students to learn about all the materials and technology available to them. Subsequently, part on my curriculum planning included projects that required the use of library resources. For example: my students used the Internet and other library resources to come up with a plan to deal with an overgrowth of duckweed in a local waterway in Tempe, AZ. Every curricular unit had an inquiry component tied to the use of information technology resources.

As a university professor, I have taught online and face-to-face graduate classes that required the use of education databases and journals. At UAA I have worked with the College of Education liaison librarians to visit the online classes and introduce students to the resources
available through the Consortium Library. When there was a scheduling conflict, I conducted the sessions using the format provided by the librarian. The information gained through these sessions became an essential element of the students' assignments that included research and practitioner oriented article reviews and annotated bibliographies on a topic related to their teacher action research projects.

**Leadership Potential**

EDFN A348 STEAM in the Context of Alaska was created as a request made by the Elementary Education Faculty. As a science educator, I volunteered to design this course with the assistance of Kathryn Kurtz who is the Anchorage school district STEM coordinator. This cooperation allows us to articulate academic expectations between the K-12 and university systems. The impact of this course resides in the synergistic approach across education systems.

In accordance to the University and College of Education (COE) guidelines, this course will undergo review by faculty at three different levels: the Elementary Education faculty, the Course and Curriculum Committee and the UAA Undergraduate Academic Board. As the chair of the COE Course and Curriculum Committee and a member of the Undergraduate Academic Board, I understand first hand the impact of innovative curriculum: it illuminates the perspective of faculty regarding possibilities for cooperation across systems and between disciplines. Many of the faculty members involved in these organizations are also curriculum initiators. Furthermore, we carefully review and learn from the courses brought forth by faculty.

Equally important is the role of this course in informing the perspective of COE faculty involved in the Center for Alaska Native Teacher Preparation. As the Principal investigator of the Chevak Project, I am currently working with Cup'ik inservice teachers on a curriculum writing project that connects content and pedagogy implemented in the Cup'ik immersion school
in Chevak, Alaska with the preparation of Alaska Native teachers. This course integrates multiple knowledge systems: the western and traditional approaches to design and problem solving. Inspired by the wisdom of Alaska native elders the content objectives of EFNA348 effectively enacts the two rivers of knowledge metaphor shared by Alaska Native elders and shared by Barnhardt and Kawagley (2010). For the reasons I shared, the collaborative design approach and the learning goals of EDFN A348 represent an innovative curricular design that will impact faculty and students at the K-22 levels.

Project Description

The National Forum on Information Literacy (NIFL) [2005]), defines this construct as "the ability to know when there is a need for information, to be able to identify, locate, evaluate, and effectively use that information for the issue or problem at hand.... the key competency needed to enhance K-16 academic performance, engage patient personal responsibility, improve workplace performance and productivity, and compete effectively in a dynamically evolving world marketplace. "

Our collaboration seeks to improve the quality of the proposed undergraduate STEAM in the Context of Alaska course. By infusing different course aspects: class discussions, student outcomes and instructor Goals with opportunities for students to engage in tasks that build their capacity to become critical and effective consumers of information. Furthermore, as future teachers, our students will be able to incorporate information literacy as an intrinsic component of their teaching philosophy and practices implement pedagogies that enhance their own pupils' skills related to information literacy.

The Course objectives as outlined in the proposed course CCG have been designed to foster the students' interaction with activities that require the identification, evaluation and use of
information through a variety of resources available on the Internet and through the Consortium library. For instance, throughout the semester, the students will have the opportunity to evaluate case studies and research STEAM areas within the Alaskan context.

**Alignment of Course Objectives, Student Learning Outcomes, and Standards**

In order to foster the creation of an information literate individual in EDFN A348, both instructor and librarian would work together to identify specific collaborative activities and assignments that would meet both the Association of College and Research Libraries Information Literacy Competencies, University Learning Outcomes and align with the student/course outcomes for student learning. The ACRL IL Competencies (2000) define an information literate individual as having the ability to:

1. Determine the extent of information need
2. Access the needed information effectively and efficiently
3. Evaluate information and its sources critically
4. Incorporate selected information into ones knowledge base
5. Use information effectively to accomplish a specific purpose
6. Understand the economic, legal and social issues surrounding the use of information and access and use information legally and ethically.

The collaboration between the librarian and the instructor will create learning opportunities, which will align with ACRL’s IL Competency standards 1, 2 and 4 respectively. Each ACRL IL standard will then align with a specific University Learning Outcome resulting in a curriculum which is information literate focused.

In achieving ACRL IL standard 1, an assignment will be developed to correspond with the timing of an introduction to academic research and the types of sources that the student may need
to access to complete the assigned case study at the end of the semester. This standard will correspond with the University Learning Outcome of employing critical thinking skills and aligns with the introduction of the course so that students will be prepared to identify resources needed to complete their research.

To achieve ACRL IL standard 2, the assignment will revolve around the course outcome where students will need to determine their own topic for completing a case study. This assignment will allow the student to create a research plan that will set the student up for success in researching their topics. This research plan assignment will align with the University Learning Outcome of employing independent learning and information literacy skills.

Finally ACRL IL standard 4 will align with the final portion of the course objective, in that the students will have a completed case study. Students will analyze the effectiveness of the case studies in small groups. This assignment will align with the University Learning Outcome of communicating effectively. Please refer to the chart below for a more detailed description of the proposed course objectives, librarian collaboration/assignments, and university learning outcomes and ACRL IL Competency Standards alignment methods used:
<table>
<thead>
<tr>
<th>Course Objectives/Student Learning Outcomes</th>
<th>Librarian collaboration with class or activity</th>
<th>University Learning Outcomes</th>
<th>ACRL IL Competency Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discuss the importance of STEAM in the context of Alaska</td>
<td>Library session with assignment on identifying the characteristics of different types of sources.</td>
<td>2. Employ critical thinking skills</td>
<td>Standard 1: The information literate student understands the nature and extent of the information needed.</td>
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<tr>
<td>Assessment procedures: Class discussions, Essay.</td>
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<td>Performance Indicator 2: The information literate student identifies a variety of types and formats of potential sources for information.</td>
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<tr>
<td>Articulate solutions to problems using STEAM</td>
<td>Create a research plan by identifying main idea words, synonyms, and geography and time periods to study.</td>
<td>3. Employ independent learning and information literacy skills</td>
<td>Standard 2: The information literate student accesses needed information effectively and efficiently.</td>
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<tr>
<td>Assessment procedures: Case study analysis essay, class discussion.</td>
<td></td>
<td></td>
<td>Performance Indicator 2: The information literate student constructs and implements effectively designed search strategies.</td>
</tr>
<tr>
<td>Completion of a case study describing an Alaskan example of STEAM.</td>
<td>Reflection on research plan and sources used</td>
<td>Communicate effectively</td>
<td>Standard 4: The information literate student, individually or as a member of a group, uses information effectively to accomplish a specific purpose.</td>
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<tr>
<td><em>Assessment procedures:</em> Completed case study assessed by Rubric.</td>
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<td><em>Performance indicator:</em></td>
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<tr>
<td>Identify educational standards a student would need to accomplish a STEAM project.</td>
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<tr>
<td><em>Assessment procedures:</em> Alignment document with steps of STEAM process learning standards using national and state standards. Teaching Philosophy</td>
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References


