



## Innovative Language Learning through Thematic Learning Modules and the Incorporation of ICT

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### Abstract

*The demand for innovative language learning and teaching across the globe is at the forefront of trends in education and dominates academic discussions. The application and impact of Information Communication Technology (ICT) significantly contributes to curriculum development changes at public schools and universities as they reassess their goals and reinvigorate the curriculum related to content knowledge and language learning. The development of thematic learning modules encourages students to acquire knowledge and make connections through a common theme drawing from real world experiences. By integrating content and engaging students simultaneously in literacy and language learning, students are able to explore and expand their knowledge through creative resources. This presentation/publication focuses on constructing a framework for thematic learning modules that addresses course redesign incorporating essential content and ICT. Language learning is achieved along with conceptual understanding as students engage in the instruction and activities. Unit and lesson design as well as pedagogical input accompanying the learning activities is strengthened through meaningful student and teacher engagement as well as integrated language learning. Comprehensible input is expanded and students acquire discipline specific language and interaction skills as they collaborate with peers. Creative examples of thematic learning modules are provided specifically related to science and the environment. A wide variety of web-based resources are available that include valuable information for educators and students. Integrated language learning and ICT accompanies numerous thematic frameworks, and the curriculum and instructional materials are available in multiple languages. Among the examples provided is a collection of integrated lessons and resources in the sciences. By engaging a community of learners in a thematic curriculum of teaching and learning that integrates ICT and language learning, students are motivated and challenged to high ideals and positive outcomes.*

**Keywords:** *Thematic, modules, integrated learning, ICT*

### 1. Introduction

English language learners are confronting an increasingly challenging environment as they strive to develop knowledge to meet the competing demands of language acquisition on one hand and gain essential content on the other. Curriculum development to address these demands and focus on engaging students dominates instructional conversations and the pursuit of pedagogical input. Moreover, communication and discipline specific language skills are simultaneously confronted with the increasing need to acquire skills in academic and occupational arenas in order to be a competitive member of the global economy. Learning mechanisms are further supported yet also challenged by diverging pathways between language acquisition, content knowledge and the impact of technology, and it is crucial to recognize the interrelatedness of language, culture and content. ICT tools are increasingly incorporated in the field of education and particularly in language learning to strengthen teaching and incorporate a wide range of curriculum materials and methods resulting in effective instruction and transformative action.

Thematic learning modules organize the curriculum around macro themes and integrate basic disciplines such as math and science with the exploration of a broad subject [1]. Among the key reasons supporting the use of thematic units are demonstrating the interdisciplinary nature of learning, making use of

collaborative and cooperative learning, encouraging the learner to focus on the mastery of objectives, model the resources used in research, making the learner focus on the mastery of objectives, and encouraging the effective use of technology [2].

## **2. A framework for thematic learning modules**

Thematic learning modules focus on the instructional method of selecting a theme and focusing on a variety of concepts incorporating interdisciplinary and integrative teaching. Doda and Springer [3] emphasize the importance of “conversations in ever-widening circles that continue to substantiate the need for interdisciplinary approaches.” They support the need for curricula that move beyond familiarity with information to the levels of application and analysis of knowledge [4]. Professors at the University of Washington and the University of New Mexico received funding to develop an Integrated Environmental Health Middle School Project to train educators to plan, implement, and assess projects [5] and provides a number of example integrated learning modules [6].

When developing a framework for thematic learning modules the key steps include [7]:

- 1) Determining a theme
- 2) Integrating the theme with the existing curriculum
- 3) Designing instruction and co-curricular plans
- 4) Group activities and discussion

The themes for units can be developed by educators or students but should be integrated across the curriculum and serve as a lens to understand and examine content while generating provocative questions presented from a multi-discipline perspective [8]. Themes for the integrated learning modules should ideally be selected for relevance and interest to the students, by addressing a topic that is either of global interest to all learners or focused on a topic of local or regional environmental interest that the students can identify and self-relate to their own circumstances, for example local environmental issues impacting the students' own health [6]. This strategy also lends itself well to the opportunity to analyze relevant research and its implications at the students' appropriate level of understanding while exploring and expanding knowledge. This concept also blends well with the curriculum presented with the interdisciplinary approaches of Problem-based and Project-based learning. Students who are multilingual and English language learners are also able to successfully engage in thematic learning modules that incorporate reading, writing, speaking and listening skills. ICT has a strong impact on engaging these students as they endeavor to succeed in both content and language learning. What follows are examples from the science field on successful thematic learning projects.

## **3. Examples of learning activities and examples of thematic learning modules containing integrated resources and lessons in math, language arts, social sciences and STEM:**

The University of Washington and University of New Mexico developed a structured ‘how to teachers manual’ for K-12 teachers to develop their own integrated learning projects, and offers Tools for teachers which provide a step-by-step program ‘HEART Manual’ for developing their own environmental health related research projects relevant to the local students, accompanied by structured hands on student activities, sample lesson plans and worksheets to guide students as they develop research projects as well as many resources for teachers to assist them in developing locally relevant integrated learning modules [5, 6]. Three integrated learning modules employing Asthma, Diabetes or Lead as health-related and student relevant topics combine coherent learning modules in social studies, language arts, math and environmental sciences, as well as other similar teacher resources are available for download by teachers [6].

Georgia Gwinnett College has developed thematic learning modules for introductory biology courses in a wide range of topics including the Human Immunodeficiency Virus (HIV), Sustainable Agriculture, the Exploration of the Human Brain, Biodiversity, Nutrition, and the Study of Sexually Transmitted Diseases in order to enhance the tractability of content and share general biology topic themes in a way that is relative and interesting, particularly for our general curriculum students that are not anticipating a career in the STEM fields. The Science Education Alliance in partnership with the Howard Hughes Medical Institute



(HHMI) has also introduced a Phage Hunters Advancing Genomics and Evolutionary Sciences (PHAGES) Project that has been incredibly valuable as a theme for students to learn about introductory immunology and microbiology in introductory biology classes [9]. These themes allow instructors to play to their strengths and passions in content areas while providing students with exposure to specialized areas within different science disciplines in order to promote lifelong learning and interest. Thematic learning modules have also been used to integrate and unify content across the disciplines of science and chemistry.

Thematic modules are also used broadly in relation to study abroad and domestic field study opportunities. These modules include the use of conservation biology and natural history to integrate courses in botany, biology, and calculus or conservation biology and Spanish to deepen the richness of the field experience and increase retention of knowledge. Students who participate in these experiences report that this holistic approach to the educational experience is challenging, fun, and rewarding.

At the upper elementary and middle grade level, educators focused on Eco-Inquiry addressing ecological learning experiences for students. This type of “whole science” curriculum embedded hands-on science within thematic multi-dimensional learning experiences. The three modules that were utilized for this age group focused on food webs, decomposition, and nutrient cycling. These four to seven week modules featured student research teams that conducted investigations, peer reviews, and sharing of ideas and findings [10].

Any relevant area of study can be expanded to cover a broad range of comprehensive information based on thematic instruction and creativity. Innovative opportunities abound in numerous subject areas that will engage and actively involve students in pursuit of higher level thinking skills. Creative educators are capable of incorporating various learning styles and teaching practices for effective educational accomplishments and the acquisition of language and content knowledge simultaneously. These learning opportunities when well developed will achieve positive outcomes and meet expected standards and enhance expectations.

#### **4. Conclusion**

There are significant advantages to the incorporation of thematic learning modules for both ICT and content based instruction. The examples described above represent a limited sample of the numerous opportunities for integrated learning realizing these activities and well-designed modules. Integration of thematic modules supports language learning, crucial STEM engagement, as well as the acquisition of knowledge across the curriculum. As educators redesign their curriculum to focus on web based and thematic modules designed to strengthen student engagement and learning, knowledge is acquired resulting in positive learning outcomes that confront current macro level ideas. Meaningful and purposeful thematic learning modules will lead to additional learning experiences in a variety of modalities that will connect both language and content knowledge. These include opportunity to denote the need to integrate subjects learned, particularly STEM, across broad questions, issues or topics, as well as offering students the implicit answers to the “why?” and “what for?” questions frequently encountered in STEM and social studies instruction. Further research is recommended to explore the effectiveness of thematic learning modules and their benefits to both educators and students. As connections are made between these modules and curriculum development designed to focus on crucial pedagogical strategies, knowledge will be gained to meet the competing demands on education within our increasingly complex global society.

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