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يصدرها مركز العطاء للاستشارات التربوية - الكويت بالتعاون مع كلية العلوم التربوية
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علمية دورية محكمة يصدرها مركز العطاء للاستشارات التربوية- دولة الكويت

بالتعاون مع كلية العلوم التربوية- جامعة الطفيلة التقنية- الأردن

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للمجلة معامل تأثير عربي ومفهرسة في العديد من قواعد المعلومات الدولية

Journal of Studies and Educational Researches
مجـــلة الدراســـات والبحـوث التربـــوية

الهيئة الاستشارية للمجلة

التدقيق اللغوي للمجلة

أمين المجلة

التعريف بالمجلة

تصدر مجلة الدراسات والبحوث التربوية عن مركز العطاء للاستشارات التربوية- دولة الكويت بالتعاون مع كلية العلوم التربوية- جامعة الطفيلة التقنية- الأردن كل أربعة شهور، وهي مجلة علمية دورية محكمة بإشراف هيئة تحرير وهيئة علمية تضم نخبة من الأساتذة، وتسعى المجلة للإسهام في تطوير المعرفة ونشرها من خلال طرح القضايا المعاصرة في مختلف التخصصات التربوية، والاهتمام بقضايا التجديد والإبداع، ومتابعة ما يستجد في مختلف مجالات التربية؛ والمجلة مفهرسة في العديد من قواعد المعلومات الدولية، ومنها: دار المنظومة Dar Almandumah، معرفة e- MAREFA، شمعة Shamaa، قاعدة المعلومات التربوية Edu Searach، وللمجلة معامل تأثير عربي.

أهداف المجلة

تهدف المجلة إلى دعم الباحثين في مختلف التخصصات التربوية من خلال توفير وعاء جديد للنشر يلبي حاجات الباحثين داخل الكويت وخارجها. ويمكن تحديد أهداف المجلة بشكل تفصيلي في الأهداف الأربعة التالية:

1. المشاركة الفاعلة مع مراكز البحث العلمي لإثراء حركة البحث في المجال التربوي.
2. استنهاض الباحثين المتميزين للإسهام في طرح المعالجات العلمية المتعمقة والمبتكرة للمستجدات والقضايا التربوية.
3. توفير وعاء لنشر الأبحاث العلمية الأصيلة في مختلف التخصصات التربوية.
4. متابعة المؤتمرات والندوات العلمية في مجال العلوم التربوية.

مجالات النشر في المجلة

تهتم مجلة الدراسات والبحوث التربوية بنشر الدراسات والبحوث التي لم يسبق نشرها في مختلف التخصصات التربوية، على أن تتصف بالأصالة والجدة، وتتبع المنهجية العلمية، وتراعي أخلاقيات البحث العلمي. كما تنشر المجلة ملخصات رسائل الماجستير والدكتوراه ذات العلاقة بمختلف التخصصات التربوية، والمراجعات العلمية، وتقارير البحوث والمراسلات العلمية القصيرة، وتقارير المؤتمرات والمنتديات العلمية، والكتب والمؤلفات المتخصصة في التربية ونقدها وتحليلها.

القواعد العامة لقبول النشر في المجلة

1. تقبل المجلة نشر البحوث باللغتين العربية والإنجليزية وفقاً للمعايير التالية:

- توافر شروط البحث العلمي المعتمد على الأصول العلمية والمنهجية المتعارف عليها في كتابة البحوث الأكاديمية في مجالات التربية المختلفة.
- أن تحتوي الصفحة الأولى من البحث على:
  - اسم الباحث ودرجته العلمية والجامعة التي ينتمي إليها.
  - البريد الإلكتروني للباحث، ورقم الهاتف النقال.
  - ملخص للبحث باللغة العربية والإنجليزية في حدود (150) كلمة.
  - الكلمات المفتاحية بعد الملخص.
- ألّا يزيد عدد صفحات البحث عن (30) صفحة متضمنة الهوامش والمراجع.
- أن تكون الجداول والأشكال مُدرجة في أماكنها الصحيحة، وأن تشمل العناوين والبيانات الإيضاحية الضرورية، ويُراعى ألّا تتجاوز أبعاد الأشكال والجداول حجم الصفحة.
- أن يكون البحث ملتزماً بدقة التوثيق حسب دليل جمعية علم النفس الأمريكية APA الإصدار السادس، وحسن استخدام المصادر والمراجع، وتثبيت مراجع البحث في نهايته.
- أن يكون البحث خالياً من الأخطاء اللغوية والنحوية والإملائية.
- أن يلتزم الباحث بالخطوط وأحجامها على النحو التالي:

- اللغة العربية: نوع الخط (Sakkal Majalla)، وحجم الخط (14).
- اللغة الإنجليزية: نوع الخط (Times New Roman)، وحجم الخط (14).
- تكتب العناوين الرئيسية والفرعية بحجم (16) غامق (Bold).
- أن تكون المسافة بين الأسطر (1.15) بالنسبة للبحوث باللغة العربية، وتكون المسافة بين الأسطر (1.5) بالنسبة للبحوث باللغة الإنجليزية.
- تترك مسافة (2.5) لكل من الهامش العلوي والسفلي والجانبين.

2. ألاً يكون البحث قد سبق نشره أو قُدم للنشر في أي جهة أخرى.

3. تحتفظ المجلة بحقها في إخراج البحث وإبراز عناوينه بما يتناسب وأسلوبها في النشر.

4. ترحب المجلة بنشر ما يصلها من ملخصات الرسائل الجامعية التي تمت مناقشتها وإجازتها في مجال التربية، على أن يكون الملخص من إعداد صاحب الرسالة نفسه.

5. بالمجلة باب لنشر موضوعات تهم المجتمع التربوي يكتب فيه أعضاء التحرير.

إجراءات النشر في المجلة

1. ترسل الدراسات والبحوث وجميع المراسلات باسم رئيس تحرير مجلة الدراسات والبحوث التربوية على الإيميل التالي: **submit.jser@gmail.com**

2. يرسل البحث إلكترونياً بخطوط متوافقة مع أجهزة (IBM)، بحيث يظهر في البحث اسم الباحث ولقبه العلمي، ومكان عمله.

3. يُرفق ملخص البحث المراد نشره في حدود (100-150 كلمة) سواء كان البحث باللغة العربية أو الإنجليزية، مع كتابة الكلمات المفتاحية الخاصة بالبحث (Key Words).

4. يرفق مع البحث موجز للسيرة الذاتية للباحث.

5. في حالة قبول البحث مبدئياً يتم عرضه على مُحكّمين من ذوي الاختصاص في مجال البحث، لإبداء آرائهم حول مدى أصالة البحث وقيمته العلمية، ومدى التزام الباحث بالمنهجية المتعارف عليها، وتحديد مدى صلاحية البحث للنشر في المجلة من عدمها.

6. يُخطر الباحث بقرار صلاحية بحثه من عدمها خلال شهر من تاريخ استلام البحث.

7. في حالة ورود ملاحظات من المحكمين تُرسل إلى الباحث لإجراء التعديلات اللازمة، على أن يعاد إرسال البحث بعد التعديل إلى المجلة خلال مدة أقصاها شهر، ولا يجوز سحب البحث من المجلة بعد تحكيمه.

8. تؤول جميع حقوق النشر للمجلة.

9. لا تلتزم المجلة بنشر كل ما يرسل إليها.

10. المجلة لا ترد الأبحاث المرسلة إليها سواء كانت منشورة أو غير قابلة للنشر، وللمجلة وإدارتها حق التصرف في ذلك.

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المحتويات

المقالات

الافتتاحية

بسم الله الرحمن الرحيم، عليه نتوكل وبه نستعين، نحمده سبحانه كما ينبغي أن يحمد ونصلي ونسلم على أشرف المرسلين سيدنا محمد وعلى آله وأصحابه والتابعين وبعد،،،

يشهد العالم ثورة معلوماتية كبرى منذ منتصف القرن الماضي بسبب التطور السريع والهائل لتكنولوجيا الإعلام والاتصال، وقاد هذا إلى تغير العديد من المفاهيم والأسس داخل المجتمع، فلم تعد المعدات والآلات الثقيلة ورأس المال الأدوات الرئيسية للنشاط الاقتصادي، إذ حلت محلها المعرفة التي أصبحت المحرك الأساسي للنشاط الاقتصادي والفردي في كل المجتمعات، وقد أدى تزايد قيمة المعرفة في العصر الحالي إلى أن أصبحت هي الطريق نحو مجتمع المعرفة الذي تتنافس الدول في تحقيقه.

وقد جعل ذلك الدول المتقدمة تنفق حوالي (20%) من دخلها القومي في استيعاب المعرفة، ويستحوذ التعليم على نصف هذه النسبة، كذلك تنفق المنظمات الصناعية والتجارية في هذه الدول ما لا يقل عن (5%) من دخلها الإجمالي في التنمية المهنية للعاملين بها، وتنفق ما يتراوح بين (3%-5%) من دخلها الإجمالي في البحث والتنمية.

ويعد البحث العلمي الوسيلة الرئيسية لإيجاد المعرفة وتطويرها وتطبيقها في المجتمع، كما يشكل الركيزة الأساسية للتطور العلمي والتقني والاقتصادي، ويساهم في رقي الأمم وتقدمها، وهو بمثابة خطوة للابتكار والإبداع، ويمثل البحث العلمي إحدى الركائز الأساسية لأي تعليم جامعي متميز، ويعد من أهم المعايير التي تعتمدها الجهات العلمية في تصنيف وترتيب الجامعات سواء على المستوي المحلي أو القومي أو العالمي؛ ويقاس التقدم العلمي لبلد من البلدان بمدى الناتج البحثي والعلمي مقارنةً بالدول الأخرى.

ويسر مجلة الدراسات والبحوث التربوية أن تقدم لقرائها هذا العدد، وتتقدم أسرة المجلة بالشكر إلى جميع الباحثين الذين ساهموا بأبحاثهم في هذا العدد، وتجدد دعوتها لجميع الباحثين للالتفاف حول هذا المنبر الأكاديمي بمساهماتهم العلمية. وندعو الله عز وجل السداد والتوفيق.

رئيس التحرير

أ.د/ علي حبيب الكندري

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Employing Environmental storyboard in the contents of the French and Kuwaiti curricula at the secondary school: a qualitative comparative study

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Abstract: The study aimed to explore the utilisation of environmental storyboards in secondary education curricula in France and Kuwait. A qualitative approach was used, and dual-tiered analyses encompassing qualitative and semiotic assessments of curriculum content from both countries were conducted. While the qualitative analysis scrutinises integration, design, and pedagogical efficacy, the semiotic analysis examines visual and textual elements of educational content. The results reveal significant disparities between French and Kuwaiti curricula regarding environmental storyboards' integration, design, and efficacy. French content, impressively, exhibits comprehensive integration and pedagogical sophistication, contrasting with Kuwaiti content, which is characterised by limitations in-depth, interactivity, and low visual quality. However, these findings also present an opportunity for improvement. The imperative is to enhance environmental education strategies, particularly in Kuwait, to elevate the quality and effectiveness of conveying environmental concepts within curricula.

Keywords: Comparative, Curricula, Environmental, Storyboard, Kuwait.

Introduction

Environmental protection has become increasingly critical in the 21st century. Pollution, climate change, and resource depletion caused by human activities such as agriculture and warfare have led to the development of an educational tool called the Environmental Storyboard. This tool, of utmost importance, aims to integrate environmental education into global curricula, promoting sustainable interactions between students and their environment. Doing so advances green education and prepares future generations to meet sustainable living challenges.

The media's role in shaping public perception of international events, particularly conflicts, was exemplified during the Second Gulf War 1991, also known as the CNN War. Extensive media coverage, notably by CNN, underscored the evolving role of media in documenting global events and shaping narratives, including environmental dimensions (Kennedy, 2008). Similarly, the Kuwaiti Oil Well fires, a prominent ecological incident, not only facilitated discussions on environmental consequences but also integrated these discussions into Kuwaiti curricula through an environmental storyboard. This integration demonstrates Kuwait's commitment to prioritising environmental concerns within its educational frameworks (Sultan, 1997).

Recent updates to the French curriculum in Lebanese French schools have incorporated lessons on the Beirut port explosion of August 4, 2020, emphasising the role of social media in disseminating information and shaping public awareness of ecological emergencies (Mustafa, 2021). In contrast, the Kuwait Ministry of Education introduced the "Environmental Issues and Contemporary Development" course in 2009-2010, reflecting its dedication to

integrating environmental education into secondary geography curricula (Ministry of Education Kuwait, 2008).

Despite numerous studies on environmental education and curriculum development in Kuwait and France, there needs to be more discussion on using environmental storyboards within secondary-level curricula, especially in a comparative framework across different educational systems. While previous studies have explored various aspects of environmental education, none have specifically investigated the integration of ecological storyboards into curricula, particularly in the context of Kuwait and France (Al-Hashem, 2014; Al-Otaibi, 2016; Al-Kandari & Al-Subaii, 2017; Al-Hindal et al., 2019; Al-Hindal et al., 2021; Al-Soqair, 2022; Moroto & Hernández, 2023; Baarova & Hibszer, 2022). This study aims to address this research gap by conducting a qualitative comparative analysis of the integration of environmental storyboards in the French and Kuwaiti secondary curricula. By examining the approaches taken by these two educational systems, this research seeks to advance ecological education practices and contribute to a deeper understanding of environmental education across diverse cultural and educational settings.

The Problem of Study:

Aligned with the Kuwait Ministry of Education vision for modernising curricula to align with the Fourth Industrial Revolution and address educational and environmental goals, enhancing teaching methods is crucial. This involves promoting student engagement, ensuring educational quality, and improving outcomes. The Ministry emphasises global partnerships, especially for refining general education curricula. Kuwait hosts four curriculum and education development centres, an initiative for educational policy development, and a

national testing project to assess educational effectiveness. These efforts highlight Kuwait's proactive approach to educational progress and commitment to addressing current challenges while promoting sustainable development. (Ministry of Education Kuwait, 2016).

Based on the above, this study focuses on the main central question: **How does Employing the Environmental storyboard get used in the contents of the French and Kuwaiti curricula at the secondary level?**

The following study questions have been formulated according to the study's central question.

1. How was the Environmental storyboard used in the educational content of the French curriculum in secondary school in 12th grade ؟
2. How was the Environmental storyboard used in the educational content of the Kuwait curriculum in the secondary school in 12th grade ؟
3. How do semiotic elements in environmental storyboards convey educational content in French and Kuwait secondary school curricula?

Objectives of the study :

- Studying how to use the environmental storyboard in French curricula to highlight environmental issues.
- Studying how to use the environmental storyboard in Kuwait curricula to highlight environmental issues.
- Benefit from foreign experiences by using environmental storyboards to evaluate the content of Kuwaiti curricula and highlight environmental issues.

Importance of the study:

The significance of the study lies in stating the following:

- It gives visions to educators and those in charge of teacher preparation programs about the environmental storyboard as a teaching strategy to achieve the desired education outcomes in line with the New Kuwait Vision 2035 goals. It provided curriculum designers and educational policymakers in the Ministry of Education with a clear picture of the reality of designing curriculum content to highlight environmental issues. It highlights areas of improvement and integration, planning and developing local curricula, and benefiting from global experiences. It should be included in the Kuwaiti curriculum development plan, guide supervisory performance, and focus on improving educational outcomes.
- **Benefiting secondary school teachers:** emphasising the importance of developing practices to apply the environmental storyboard.
- **They are opening the way for researchers** to conduct future studies, considering the study's results and recommendations aimed at developing school curricula through global experiences**.**

The limits of the study:

1. **Subject Limitation:** The study was limited to the contents of the Kuwaiti curriculum "Contemporary Environmental and Development Issues" for 12th-grade Secondary School And the contents of the French curriculum book " History-Geography " for 12th-grade Secondary School
2. **Temporal limits:** The study was applied in the second semester of the 2023/2024 academic year.

Terminology of study:

The following main terms were defined:

- **Environmental Storyboard:**

It refers (Smith & Johnson, 2020) to a visual narrative tool incorporating illustrations, images, and text to convey environmental concepts and issues in an educational context.

It is defined procedurally and according to the objectives of this study: Collection of Environmental Storyboard created electronically by conversion Themes and characters in multimedia: audio, images, animated characters, texts, and Sound effects and including them in the contents of the school curriculum to develop environmental awareness among 12th-grade secondary school students.

- **Secondary School Curriculum:**

It encompasses the educational content designed for students in the twelfth grade. This study focuses on the contents of the Kuwaiti curriculum, "Contemporary Environmental and Development Issues," and the French curriculum book, "History-Geography," for 12th grade (Ministry of Education Kuwait, 2023; French Ministry of Education, 2021).

Theoretical Framework:

Environmental Storyboard

1. The concept of Environmental Storyboard:

- **Environmental Storyboard** is a visual narrative tool designed to convey complex environmental concepts, sustainability initiatives, and conservation efforts in an engaging and comprehensible manner (Smith & Johnson, 2020). Rooted in visual storytelling techniques, it is a strategic approach to integrating environmental themes with compelling narratives, aiming to foster environmental awareness, promote eco-conscious behaviours, and establish meaningful connections between individuals and the natural world (McCormick-Huhn & Shields,2021).

- **Additional Definitions:**
  - An interactive platform for depicting environmental scenarios, facilitating more profound understanding and engagement (Anderson & Liu, 2023).
  - A curriculum-integrated approach to foster environmental literacy by blending education with entertainment (Baker & Chong, 2023).
  - A mechanism for showcasing real-world environmental challenges and solutions, inspiring action and reflection (Singh & Patel, 2023).

So, an Environmental Storyboard is a dynamic approach that integrates visual narratives with environmental themes, aiming to foster environmental awareness, promote eco-conscious behaviours, and facilitate meaningful connections between individuals and the natural world.

2. Environmental Storyboard Elements:

Environmental storyboards encompass a variety of elements essential for effectively conveying environmental narratives and engaging Students. While drawing from educational and artistic principles, these elements are tailored to address ecological themes and messages.

a. **Visual Representation:** Storyboards utilise visual imagery to depict environmental scenarios, landscapes, and phenomena. This includes illustrations, photographs, and graphics that help convey the ecological context and stimulate viewer engagement (Smith & Johnson, 2020).

b. **Narrative Structure:** A cohesive narrative structure guides the flow of information in environmental storyboards, organising content into a logical sequence of events or ideas. This ensures clarity and coherence when communicating environmental messages to students (Jones, 2018).

c. **Emotional Appeal:** Environmental storyboards often incorporate emotional content to evoke empathy and resonate with Students' feelings toward

environmental issues. Inspirational examples such as empathy and inspiration can enhance viewer connection and motivation for action (Garcia & Lee, 2019).

d. **Audiovisual Elements:** Soundtracks and voice narration complement visual imagery in environmental storyboards, enriching the storytelling experience and conveying additional layers of meaning. Careful selection of audio elements enhances the mood and atmosphere of the narrative (Brown & Smith, 2017).
e. **Interactivity:** Interactive features such as clickable elements and quizzes encourage viewer engagement and active participation in environmental storytelling. These interactive elements foster deeper learning and understanding of ecological concepts (Johnson, 2019).
f. **Message Economy:** Environmental storyboards prioritise concise and impactful messaging, avoiding unnecessary details or distractions. This ensures that the core environmental message is effectively communicated to Students within a limited time (Lee & Kim, 2020).
g. **Rhythmic Presentation:** The pace and rhythm of environmental storyboards are crucial in maintaining viewer engagement and comprehension. A balanced presentation of audio, visual, and textual elements ensures a smooth and coherent storytelling experience (Clark & Miller, 2018).

Each element is carefully chosen to enhance the educational impact of Environmental Storyboards. For example, visual representations are not mere decorations but pivotal in conveying the gravity of environmental issues, as Smith & Johnson (2020) support. Jones (2018) highlights the narrative structure's role in ensuring message clarity, while Garcia and Lee (2019) underline the effectiveness of emotional appeal in fostering a personal connection with environmental topics.

3. **Types of Images in Environmental Storyboards:** Environmental storyboards utilise various images to convey information, evoke emotions, and engage students. These include photographs, illustrations, infographics, maps, diagrams, and charts/graphs, each serving unique purposes in educational and advocacy contexts (Wang & Chen,2020)
4. **Types of Text in Environmental Storyboards:** Text is essential to environmental storyboards as it provides context, explanations, dialogue, and narration. Narrative text, explanatory text, dialogue, captions, labels, environmental messages, and educational content are some of the textual components typically used to deliver messages effectively (Saldana, 2016).
5. **The selection of images and text in Environmental Storyboards** It is essential to make strategic decisions that align with educational objectives. According to Singh and Patel (2023), photographs and illustrations can evoke emotional responses, making environmental issues more relatable. Additionally, narrative texts and expositions complement visuals by providing more depth and context, which enhances comprehension.
6. **Additional Elements in Environmental Storyboards:** Environmental storyboards often incorporate additional elements to enhance engagement, convey information, and evoke emotions. These include audio narration, music/sound effects, animation/motion graphics, interactive features, virtual reality/augmented reality, and gamification elements, each contributing to immersive storytelling experiences (Moreno & Mayer, 2020; Chen, 2021).

Designing Environmental Storyboards necessitates balancing aesthetic appeal and educational value. Brown and Smith (2019) advocate for designs that engage students while conveying clear environmental messages. As (Mutawa and Abu al-Hamill, 2018) discuss, integrating storyboards into curricula should

be strategic, ensuring that environmental education is comprehensive and applicable.

4. **Criteria for Environmental Storyboard Design in Curriculum Content:** Designing environmental storyboards for curriculum content entails adhering to standards to ensure effectiveness and engagement. These criteria encompass aspects related to the story, technical standards, and additional considerations such as realistic goals, the inclusion of all story elements, diversity of themes, clarity, engagement, and technical specifications (Parks & Guay,2019)
5. **Relationship between Environmental Storyboards and Environmental Events:** Environmental storyboards reflect real-world environmental issues and events, leveraging them as narrative backdrops or central elements in storytelling. Conversely, they can also be influenced by actual environmental events, serving as responses, attempts to understand, or expressions of concern. Thus, environmental storyboards are crucial in raising awareness of environmental issues and promoting interaction by focusing on human and emotional aspects (Hilander, 2023).

Inclusion of Environmental Education in School Curricula: Various approaches exist for integrating environmental education into school curricula, including the topics approach, chapter or unit approach, and integrated approach. Each approach offers advantages and disadvantages, considering the depth of exploration, application difficulties, continuity, development challenges, evaluation complexity, and relevance to student learning (Mutawa & Abu al-Hamill, 2018).

Environmental Storyboards bridge students and ongoing environmental events, offering a platform for reflection and learning. Hilander (2023) notes the

importance of leveraging current events to foster a deeper understanding and empathy towards environmental challenges.

Previous Studies:

Below is a presentation of some previous studies related to the subject of the study, and they are presented in chronological order from oldest to most recent, as the following:

Al-Hashem (2014) examined the impact of the inquiry teaching method on enhancing scientific thinking and fostering positive attitudes toward specific environmental issues among Kuwaiti secondary school students. Employing a semi-experimental design, termed pre-posttest asymmetric control group, the study focused on photosynthesis, a topic within the biology course's fourth unit for 11th-grade students. The experimental group received instruction using the inquiry teaching model, while a scale assessed scientific thinking development, and a questionnaire gauged attitudes toward environmental issues. The study results indicated significant differences between students' pre-test and post-test scores regarding the development of scientific thinking and positive attitudes toward environmental issues. These findings suggest a substantial effect of the inquiry teaching model on the two dependent variables.

Al-Otaibi (2016) The study aimed to evaluate the 11th-grade geography textbook in Kuwait from the perspectives of teachers and educational supervisors. Considering international standards, the study sample comprised (124) geography teachers and (12) educational supervisors. A descriptive approach was adopted, and the data were collected using a questionnaire. The study results indicated a significant positive evaluation of the geography textbook among teachers and educational supervisors according to international standards. Furthermore, no statistically significant differences were found in the

evaluations between teachers and supervisors based on job roles, academic qualifications, or years of experience.

Al-Kandari and Al-Subaii (2017) examined the efficacy of a program utilising free Google Earth applications to enhance specific environmental geographic concepts, such as environmental balance, human interaction, and the use of geographic coordinates. The study involved 38 students from Kuwait University's College of Education enrolled in the Teaching Methods course. Employing a quasi-experimental design, researchers administered a pretest and post-test assessments of environmental and geographic concepts. The results revealed significant improvements in post-test scores, indicating a moderate effect size in developing these concepts. Notably, gender did not influence achievement, while prior computer experience positively impacted geographic concept acquisition. This underscores the program's effectiveness in fostering environmental and geographic understanding, regardless of gender, and highlights the role of computer experience in facilitating learning.

The study by Al-Hindal, Al-Ajmi, and Jawhar (2019) aimed to reveal the role of primary schools in Kuwait in educating environmental awareness from teachers' perspectives. The study sample comprised 454 randomly selected participants, and data were collected through a questionnaire. Results of the study indicated that most female teachers perceived primary schools' role in environmental education and awareness dissemination as weak due to inadequate textbooks and teachers' awareness efforts. In contrast, the school administration's role was deemed moderate, and years of teaching experience significantly influenced teachers' perceptions of their roles but not textbooks or school management. Additionally, educational zones did not affect teachers'

perceptions of textbooks or their roles but did impact the school administration's perceptions.

The study by Al-Hindal Al-Fijam and Al-Shammari (2021) aimed to identify environmental issues that should be incorporated into the sixth-grade science textbook in Kuwait. The study analysed parts one and two of the sixth-grade science textbook using a content analysis card based on environmental problems. The study results showed that the textbook only covered eight environmental problems, addressing them weakly. The study highlighted the absence of specific environmental issues that should have been included. The "Atmospheric Environment" domain comprised 40% of the content, followed by "Population-Related Problems" at 30%, "Biological Environment" at 20%, and "Hydrosphere" at 10%. Notably, neither part of the sixth-grade science textbook addressed environmental problems related to the "Geological Environment" domain.

Al-Soqair (2022) The study aimed to design an electronic learning environment using an Augmented Reality Application and examine its impact on developing Geography of Administrative Regions (GAR) achievement among primary school pupils. The study sample consisted of 50 fifth-grade pupils divided into two equal groups: an experimental group taught through the electronic learning environment using an Augmented Reality Application and a control group taught using traditional classroom methods. Results of the study revealed a statistically significant difference between the mean scores of the experimental group before and after applying the GAR achievement test, with higher scores observed post-application. Additionally, there was a statistically significant difference between the mean scores of the experimental and control groups post-application of the GAR achievement test, favoring the

experimental group. These findings indicate a positive impact of designing an electronic learning environment using an Augmented Reality Application on developing GAR achievement among primary-school pupils in Saudi Arabia.

The study by Baarova and Hibszer (2022) aimed to compare climate change education in Czech and Polish geography curricula. The study aimed to identify similarities and differences in climate change teaching content across core curricula and textbooks. Analysing 22 textbooks and core curriculum documents, the study found that Czech and Polish students are exposed to various aspects of climate change in geography lessons, including causes, consequences, and solutions. The study results show that geography teachers play a role in fostering pro-environmental attitudes. However, discrepancies exist in the structure and detail of basic curricula and the presentation of climate change content in textbooks between the two countries. Czech textbooks offer more extensive coverage, while Polish textbooks prioritise illustrations.

In their research, Moroto and Hernández (2023) aimed to investigate Spanish geography teachers' perspectives at secondary and baccalaureate levels. Their study aimed to gauge textbook usage frequency, examine climate change coverage, explore integration methods, and evaluate the importance of global warming teaching. They surveyed 96 teachers from 2019 to 2022. Results of the study varied views on textbook utilisation, with 44.8% expressing concerns about inadequate climate change coverage. Teachers often supplemented textbooks with real-world scenarios (35.4%) and expert-led discussions (27.1%). Understanding teachers' reliance on traditional resources, perceptions of climate change content, and instructional methods is crucial for effectively addressing this pressing societal issue and educating future generations.

Commenting on previous studies :

From the previous presentation of previous studies, it is noted that:

- **Most previous studies followed** the quantitative approach due to its appropriate **nature and objectives.**
- **These studies collectively emphasise** the importance of environmental education and related issues and ways to review them in various educational environments, from primary school through middle and high school and ending with university school, across various disciplines. He highlighted the diversity of Environmental Learning and its importance in enhancing academic achievements and fundamental skills related to the environment.
- The study leveraged previous research as a guide, drawing from Arab and foreign sources relevant to its topic. This influenced the problem orientation, methodology formulation, and theoretical framework construction. Prior studies also informed the design of study tools for effective and reliable data collection. The study's findings were then discussed, analysing agreement or disagreement with previous research results, thereby determining its complementarity within the existing research landscape.
- The study departed from previous approaches by adopting a qualitative curriculum, necessitated by its unique nature and objectives. It delved into the contents of Kuwaiti and French curricula regarding "environmental storytelling," supplementing existing research. This comparison involved employing initial-level qualitative content analysis and advanced-level film analysis, a novel approach in educational research. To ensure comprehensiveness, the researchers extensively searched databases and sources, including Dar Al Mandumah and the Knowledge Bank, domestically and internationally, up to March 1, 2024.

Study procedures:

Study Approach:

The investigation leaned on qualitative inquiry, which, as defined by Creswell and Poth (2018), is a research approach aimed at comprehensively understanding and exploring various aspects such as experiences, meanings, beliefs, values, attitudes, relationships, and cultural and social phenomena. This method delves into the intricate details, focusing on contextual factors and interactions among individuals and communities. According to Leavy (2022), qualitative research uses diverse data collection techniques such as personal interviews, observations, field recordings, and content analysis. Its primary goal is to contextualise phenomena, interpret interactions, and derive meanings through inductive reasoning and deep reflection.

Study design:

The study relied on the content analysis through two levels: the explicit and implicit qualitative initial level of the contents of the Kuwaiti and French curriculum in the selected sample of books, the secondary level, and the advanced level, which is the semiotic analysis of icons and activities through the selection of two environmental events.

Data collection

Sample qualitative study:

Table (1)

Characteristics of the contents of the Kuwaiti and French curricula

	Curriculum Content	
	French	Kuwaiti
the book	History-Geography	Contemporary environmental and development issues
Edition year	2021	2023
number of units	7	6
number of pages	166	197
Available	Paper book, pdf file, electronic platform	Paper book, pdf file

Kuwait's curriculum prioritises cognitive and quantitative aspects, neglecting qualitative presentation and environmental goals. In contrast, the French curriculum integrates environmental topics, emphasising qualitative presentation. Moreover, the French curriculum provides electronic access and technical support for interactive learning, unlike Kuwait's reliance on modern technology, which compares both curricula.

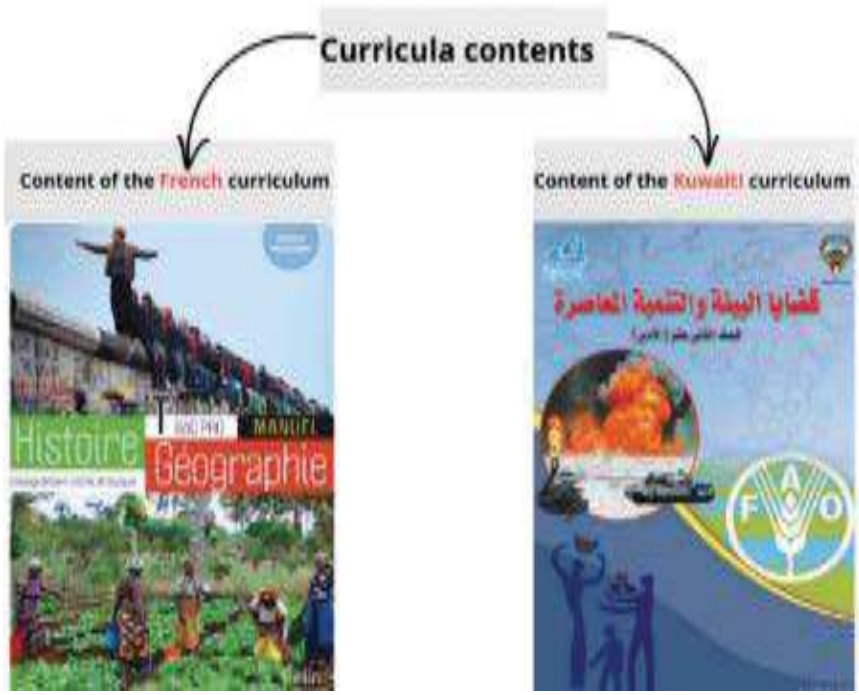


Figure (1) The content in the Kuwaiti and French curricula in the study

Data Analysis

1. Curriculum Content Analysis:

It systematically examines the structure, themes, and educational objectives embedded in curricular materials (Richards & Morse, 2019). The present study used qualitative content analysis to analyse the inclusion and presentation of environmental storyboards.

Table (2)

Main categories and subcategories, codes, and their definitions

Main	Sub	Code	Definition
Visual elements	Illustrated	Artistic Representations	Artistic representations visualising environmental concepts, landscapes, or creatures.
		Real-World Images	Depict environmental scenes, events, and phenomena, enhancing viewer authenticity and immediacy.
	Graphical	Infographics	Visually represent complex information, data, or knowledge about environmental topics.
		Maps	Illustrate spatial relationships, distribution patterns, and geographic features related to environmental topics.
		Diagrams	Provide simplified representations explaining complex environmental processes or systems.
		Charts and Graphs	Visualise quantitative data and trends related to environmental variables.
Textual elements	Narrative	Narrative Text	Descriptive passages, dialogue, or exposition that guide viewers through the environmental narrative.
		Dialogue	Conversations between characters add authenticity and depth to the environmental storytelling.
	Expository	Expository text	Text providing context and additional information about visual elements in the storyboard.
		Captions and labels	Used to label or describe visual elements in the storyboard.
Audiovisual elements	Sound	Soundtracks	Background music or audio tracks that enhance the environmental narrative.
		Voice Narration	A voice-over provides narration to guide viewers through the environmental storyline.
		Interactivity	Features that allow viewers to interact with the environmental storyboard, such as quizzes or clickable elements.
Emotional appeal	Emotional	Evocative Imagery	Designed to evoke emotional responses from viewers.
		Symbolism	Representations that convey deeper meanings or emotions related to environmental themes.
		Emotional Narration	Narrative elements, such as tone or delivery, evoke emotional responses from viewers.
Message economy	Message	Conciseness and Impact	They convey environmental messages clearly and efficiently to maximise their impact.
		Call to Action	That encourages viewers to take specific actions related to environmental issues.
		Message Clarity	That ensures environmental messages are easily understandable and unambiguous.
Rhythmic presentation	Presentation	Pacing and Tempo	That controls the speed and rhythm of the environmental narrative.
		Musical Accompaniment	Of background music or musical scores that enhance the storytelling experience.
		Visual Rhythm	That creates a rhythmic flow and continuity in the visual presentation of the environmental storyboard.
Environmental messages	Advocacy	Environmental Awareness	Designed to raise awareness about environmental issues among viewers.
		Behavior Change	They are intended to encourage changes in behaviours or attitudes towards environmental conservation.

		Policy Advocacy	We are advocating for specific policies or measures to address environmental challenges.
Educational content	Educational	Scientific Concepts	Explaining scientific concepts related to environmental topics.
		Environmental Education	It aims to educate viewers about environmental issues, challenges, and solutions.
		Critical Thinking	Critical thinking skills among viewers, encouraging them to analyse and evaluate environmental information.
		Problem-Solving	Solve environmental problems or challenges presented in the storyboard.
		Decision-Making	Make informed decisions regarding environmental issues based on the information provided.

Table (3)

The frequency and percentage of comparing the contents

Main	Sub	Code	Kuwaiti		French	
			F	%	F	%
Visual elements	Illustrated	Artistic Representations	16	7.05%	51	9.03%
		Real-World Images	80	35.24%	44	7.79%
	Graphical	Infographics	Not available	---	35	6.19%
		Maps	44	19.38%	54	9.56%
		Diagrams	7	3.08%	34	6.02%
		Charts and Graphs	26	11.45%	29	5.13%
Textual elements	Narrative	Narrative Text	2	0.88%	21	3.72%
		Dialogue	Not available	---	12	2.12%
	Expository	Expository text	21	9.25%	11	1.95%
		Captions and labels	1	0.44%	21	3.72%
Audiovisual	Sound	Soundtracks	Not available	---	17	3.01%
		Voice Narration	Not available	---	15	2.65%
		Interactivity	Not available	---	12	2.12%
Emotional appeal	Emotional	Evocative Imagery	13	6.53%	11	1.95%
		Symbolism	5	2.51%	9	1.59%
		Emotional Narration	8	4.02%	11	1.95%
Message economy	Message	Conciseness and Impact	8	2.65%	16	2.83%
		Call to Action	6	1.99%	14	2.48%
		Message Clarity	6	1.99%	15	2.65%
Rhythmic	Presenta	Pacing and Tempo	2	0.66%	10	1.77%

		Musical Accompaniment	Not available	---	11	1.95%
		Visual Rhythm	3	0.99%	9	1.59%
Environmental messages	Advocacy	Environmental Awareness	4	1.32%	16	2.83%
		Behavior Change	7	2.32%	14	2.48%
		Policy Advocacy	3	0.99%	10	1.77%
Educational content	Educational	Scientific Concepts	12	3.97%	10	1.77%
		Environmental Education	6	1.99%	12	2.12%
		Critical Thinking	4	1.32%	14	2.48%
		Problem-Solving	4	1.32%	13	2.30%
		Decision-Making	3	0.99%	14	2.48%
		Total	302	100.00%	565	100.00%

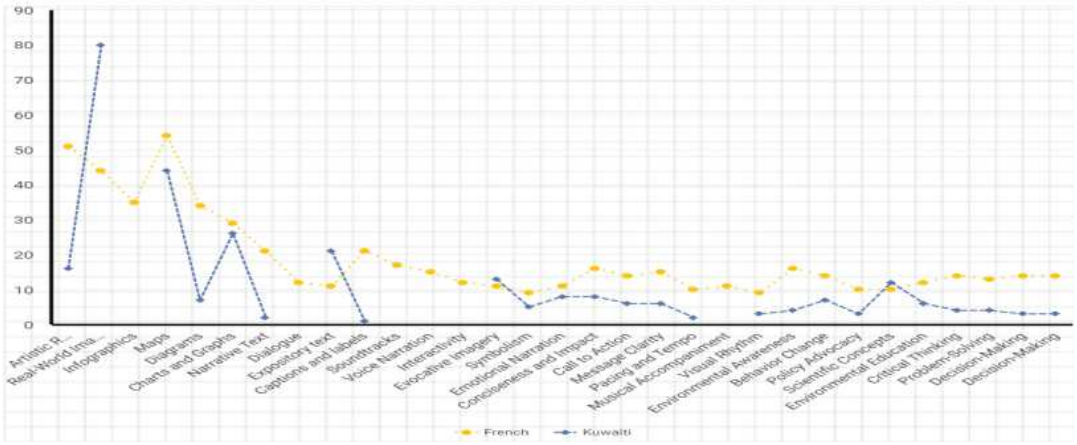


Figure (2) Graph comparing the contents of the French and Kuwaiti

The qualitative analysis (see Table 3) presents a comprehensive overview of environmental education content within the French and Kuwaiti curricula. This discussion aims to interpret the findings and provide insights into the strengths and weaknesses of each educational system in addressing environmental themes.

a. **Visual Elements:** This reveals that the French and Kuwaiti curricula incorporate visual elements to convey environmental concepts. However, the French curriculum appears to have a more diverse range of visual aids,

including artistic representations, real-world images, infographics, maps, diagrams, and charts/graphs. This suggests a more comprehensive approach to visually representing environmental content in French educational materials.

b. **Textual Elements:** Both curricula utilise narrative and expository text to convey environmental information. While the Kuwaiti curriculum focuses more on narrative text and dialogue, the French curriculum incorporates a balanced mix of narrative, expository, and dialogue elements, along with captions and labels. This indicates a more varied and potentially engaging textual approach in the French educational materials.

c. **Audiovisual Elements:** Both curricula integrate audiovisual elements to enhance environmental learning experiences. However, the French curriculum prioritises audiovisual components such as soundtracks, voice narration, and interactivity more than the Kuwaiti curriculum. This suggests a more multimedia-rich approach to environmental education in the French context.

d. **Emotional Appeal:** Both curricula include elements that evoke students' emotional responses to environmental issues. While both systems incorporate emotional imagery and narration, the French curriculum also integrates symbolism, which may enhance students' emotional engagement.

e. **Message Economy:** The French and Kuwaiti curricula emphasise concise and impactful messaging to communicate environmental themes effectively. However, the French curriculum emphasises message economy, incorporating calls to action and clarity. This suggests a more strategic approach to conveying environmental messages in French educational materials.

f. **Environmental Messages:** Both curricula promote environmental awareness, behaviour change, and policy advocacy among students. However, the French curriculum allocates more content to advocacy elements than the Kuwaiti

curriculum. This indicates a more explicit focus on fostering environmental activism and advocacy in French educational materials.

g. **Educational Content:** Both curricula cover various educational elements related to environmental concepts, including scientific principles, environmental education, critical thinking, problem-solving, and decision-making. While both systems provide comprehensive educational content, the French curriculum offers a slightly broader array of educational elements, suggesting a more holistic approach to environmental learning.

Overall, the qualitative analysis provides valuable insights into the environmental education content within the French and Kuwaiti curricula. While both systems exhibit strengths in conveying environmental themes, the French curriculum offers a more diverse and multimedia-rich learning experience, potentially enhancing student engagement and comprehension of environmental issues.

2. Semiotic Content Analysis:

As expounded by Deacon (2023), semiotics is a methodological approach that delves into the mechanisms through which signs and symbols convey significance, scrutinising the processes of signification, representation, and interpretation within diverse cultural and textual milieus. In adherence to this methodological framework, the present study undertook a semiotic analysis employing the "Roland Barthes" approach, focusing on the levels of recruitment and inclusion to examine the content of selected narratives from the French and Kuwaiti curricula by the study's objectives.

Two environmental narratives from the French and Kuwaiti curricula were meticulously chosen for comprehensive semiotic analysis. Specifically, the Beirut port explosion narrative, spanning pages 110 to 111, was selected

from the French content. At the same time, the Kuwait well-fires narrative, titled "Kuwaiti global environmental disaster," encompassed eight pages from page 124 to page 131 within the Kuwaiti content. These selections were analysed through environmental storytelling, considering pertinent narrative construction and representation elements.

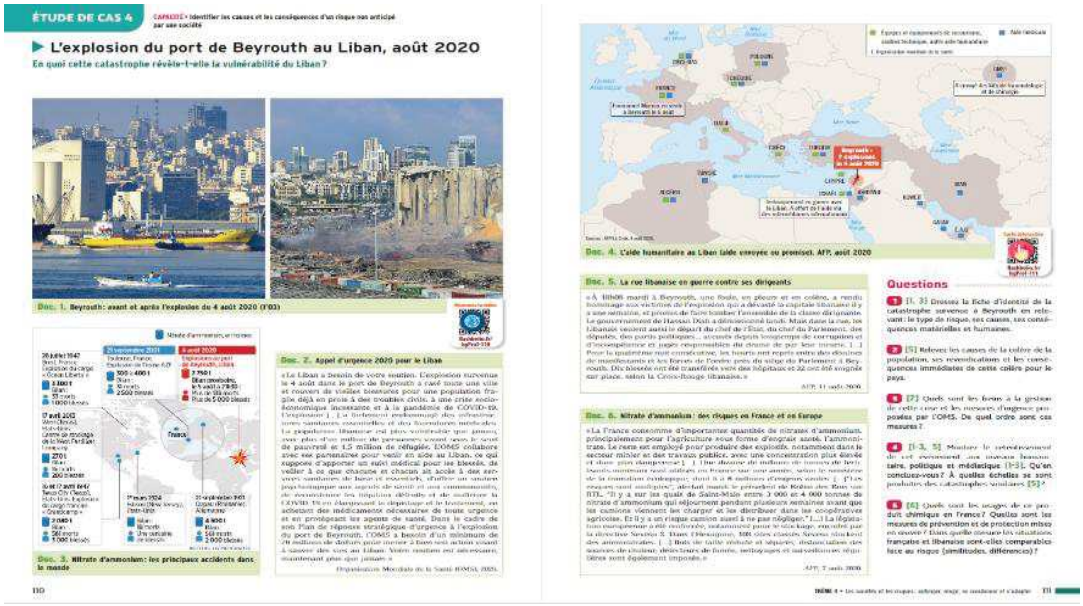


Figure (3) Environmental storyboard In French content

1. Semiotic analysis of an Environmental storyboard in French content

- **Nominative Level Analysis:**

a. Visual Representation: The French Environmental storyboard used diverse visual elements, including photographs, satellite images, infographics, and videos, to depict the environmental event with clarity and detail. Each visual element is carefully chosen to convey specific information about the ecological disaster, such as the scale of destruction and its impact on the affected area. This deliberate selection and utilisation of visual components not only enhances the comprehensibility of the narrative but also provides viewers with a comprehensive understanding of the severity and implications of the depicted event.

b. **Narrative Structure:** The storyboard follows a chronological and thematic narrative structure, presenting information in a coherent and logical sequence. Personal testimonies and news reports are integrated into the narrative, adding a human dimension to the story and fostering empathy among viewers. This combination of structured storytelling and human elements ensures that the environmental event is comprehensively depicted and emotionally engaging, allowing viewers to connect with the content on a deeper level.

c. **Textual Elements:** Text boxes and infographics provide additional context and information about the environmental event, enhancing the audience's understanding of its causes, consequences, and broader implications. Emotive language is used strategically within the textual elements to evoke emotional responses from the audience, highlighting the human cost of the disaster. This combination of visual and textual elements enriches the narrative and effectively communicates the complexity and impact of the environmental event to the viewers.

- **Implicational Level Analysis:**

a. **Emotional Appeal:** The French Environmental storyboard combines powerful imagery and emotive language to create an emotional appeal. Through vivid depictions of the devastation caused by the environmental disaster, the storyboard elicits feelings of empathy, concern, and urgency among viewers. This strategic use of visuals and language engages the audience emotionally and emphasises the significance and urgency of addressing the environmental issue portrayed in the storyboard.

b. **Socio-cultural Implications:** The storyboard implicitly addresses broader socio-cultural issues related to environmental responsibility, government accountability, and societal disaster resilience. Its representation of the

environmental event prompts viewers to reflect on their role in addressing environmental challenges and advocating for positive change. This reflective process fosters a deeper understanding of the interconnectedness between environmental issues and societal values, encouraging viewers to consider the implications of their actions on both local and global scales.

- **Bloom's Taxonomy Analysis of Questions in the Environmental Storyboard**

Based on Bloom's Taxonomy, which classifies learning objectives according to cognitive complexity, here is an analysis of the questions in the environmental storyboard:

Table (4)

Bloom's Taxonomy Analysis of Activity Questions in the Environmental Storyboard

number	Bloom's Level	Target Skill
1	Remembering Understanding (Knowledge)	Recall and identify information about the Beirut disaster (type of risk, causes, consequences).
2	: Understanding Applying (Comprehension)	Analysing the causes and consequences of public anger after the disaster, applying the information to understand a specific situation (political context of Lebanon).
3	Understanding Analyzing (Comprehension Analysis)	Identify obstacles to crisis management, analyse the nature of proposed solutions (WHO measures), and categorise them.
4	Analysing Evaluating (Analysis & Synthesis)	We are analysing the impact of the disaster across various levels (humanitarian, political, media), concluding, and comparing the scale of the event to similar disasters.
5	Understanding Analyzing (Comprehension Analysis)	It identifies the causes of public anger in France related to similar risks and applies knowledge to a different context.
6	Analysing Evaluating (Analysis and Synthesis)	I compared the chemical's use and regulations in France and Lebanon, evaluating the similarities and differences in risk management approaches.

Table (5)

Analysis of Activity Questions in the Environmental Storyboard

number	Analysis
1	This question requires basic recall and comprehension of the Environmental storyboard content.
2	This question goes beyond simple recall and asks students to understand the relationship between different concepts (anger, causes, consequences) and apply that understanding to a specific context.
3	This question requires a deeper understanding of the crisis's challenges and the ability to analyse and categorise information.
4	This question pushes students to synthesise information from various parts of the Environmental storyboard, draw connections, and make judgments about the significance and broader context of the event.
5	Like question 2, this requires understanding the concept of public anger about environmental risks and applying that understanding to a new situation (France).
6	This issue requires a higher level of study, synthesis, comparison, and evaluation of cases in two countries for risk management

2. Semiotic analysis of an Environmental storyboard in Kuwaiti content

Figure (4) Environmental storyboard In Kuwaiti content

- **Nominative Level Analysis:**
  a. **Visual Representation:** The story uses photographs and diagrams, but their quality could be better, making it easier to understand the visuals. However, visuals effectively depict burning oil wells, lakes, and damaged landscapes, highlighting the environmental devastation. Nonetheless, some visuals, like the tank tracks and the blurry bird picture, seem unrelated to the text.
  b. **Narrative Structure:** The story follows a chronological order, narrating the events of the oil well fires and their consequences. It uses subtitles to break down the story into sections, but some subtitles could be more precise. However, the story needs a solid emotional connection and relies more on information.
  c. **Textual Elements:** Textual elements such as captions and labels are clear and informative. However, there is room for improvement. Considering numerous factors, hypotheses about alternative scenarios for Kuwait require critical thinking and creative skills. These are presented in the storyboard.

- **Implicational Level Analysis:**
  a. **Emotional Appeal:** The Kuwaiti Environmental storyboard effectively conveys information but lacks the emotional appeal of its French counterpart. Incorporating more emotive language and imagery could enhance its ability to evoke robust emotional responses from the audience.
  b. **Socio-cultural Implications:** The Kuwaiti storyboard implicitly addresses socio-cultural issues related to environmental awareness and disaster response. However, there is potential to explore further and

highlight the broader socio-cultural implications of the environmental event depicted in the storyboard.

Table (6)

Bloom's Taxonomy Analysis of Activity Questions in the Environmental Storyboard

question number	Bloom's Level	Target Skill
1	Remembering	Recalling definitions
2	Considering numerous factors, critical thinking and creative skills are required to hypothesise alternative Kuwait scenarios.	Interpreting consequences
3	Applying	Evaluating methods
4	Analysing	Explaining connections
5	Understanding	Summarising information
6	Evaluating	Hypothesising alternative scenarios

Table (7)

Analysis of Activity Questions in the Environmental Storyboard

question number	Analysis
1	Requires recalling definitions of pollution, destruction, and danger.
2	It involves interpreting the consequences of increased carbon dioxide and ozone layer depletion and understanding cause-and-effect relationships.
3	Requires evaluating and suggesting methods for air pollution treatment and critical thinking about effectiveness.
4	Applying knowledge to explain the connection between water pollution and its global impact.
5	It involves summarising the environmental disaster in Kuwait using key facts and understanding and presenting complex information concisely.
6	Requires critical thinking and creative skills to hypothesise alternative scenarios for Kuwait without the Iraqi invasion, considering numerous factors.

3. Comparative Semiotic Analysis of French and Kuwaiti Environmental Storyboards

1. Visual Representation:

- **French Content** used diverse visual elements such as photographs, satellite images, infographics, and videos. It uses high-quality visuals to depict the environmental event effectively.

  Kuwaiti Content relies primarily on pictures and diagrams, which lack quality and may hinder understanding. Visuals show environmental devastation but could benefit from improvement in quality and relevance.

2. Narrative Structure:

- **French Content**: Presents information chronologically and thematically, allowing students to explore different aspects at their own pace. It incorporates personal testimonies and news reports to add a human dimension to the story**.**

  Kuwaiti Content: follows a chronological order, but subtitles could be more precise for better understanding. It lacks a solid emotional connection and relies more on informative content than personal narratives.

3. Emotional Appeal:

- **French Content:** Evokes emotions effectively through powerful images and videos showing destruction and suffering. Uses emotive language in text boxes and infographics to highlight the human cost of the disaster.

  Kuwaiti Content: There was a limited emotional response compared to the French content, with less emotive language and fewer impactful visuals.

4. Audiovisual Elements:

- **French Content**: Includes impactful audiovisual elements like drone footage, enhancing understanding of the scale of the disaster.

Kuwaiti Content: Lacks audio elements, relying solely on visual and textual elements for conveying information.

5. **Interactivity:**

- **French Content:** It does not include interactive elements like quizzes but encourages exploration through multiple media formats.

  Kuwaiti Content: It also lacks interactive features, which could enhance engagement and comprehension.

6. **Message Economy:**

- **French Content: Effectively communicates critical messages about the disaster's environmental impact and public sentiment.**

  Kuwaiti Content :It conveys the message of the environmental disaster caused by oil wells burning but could improve clarity and conciseness.

7. **Bloom's Taxonomy Analysis of Questions:**

- **French Content :**Questions cover a range of Bloom's cognitive levels, encouraging deep analysis, synthesis, and evaluation**.**

  Kuwaiti Content : The questions also span Bloom's taxonomy but may require improvement in complexity and clarity, particularly in higher order thinking skills.

8. **Overall Analysis:**

French Content : Offers a comprehensive and emotionally engaging portrayal of the environmental event, effectively integrating various media formats and fostering critical thinking.

Kuwaiti Content :provides valuable information about the disaster but could be enhanced in visual quality, emotional engagement, and cognitive complexity.

While the French and Kuwaiti Environmental storyboards aim to educate students about environmental disasters, the French content excels in emotional appeal, audiovisual elements, and cognitive engagement. However, the Kuwaiti content has potential for improvement in these areas, particularly in enhancing visual quality and fostering deeper cognitive analysis.

The sequence followed in collecting data is as follows:

1. Identification of relevant documents for data collection. Moreover, accessing the identified documents.
2. Translate documents, with particular attention to fully translating curriculum content concerning the environment.
3. Organization of data based on the research questions.
4. Analysis of the organised data.

Statistical treatment:

The study employed the following statistical methods, namely:

-Repetitions؛

-The percentage

Study results and discussion:

This part deals with the presentation of the results reached by the study after the qualitative analysis of the data, where the results of the sample analysis process were limited to the contents of the selected curricula in the study. Moreover, the following is a presentation of these results:

The results of the first question:

Which states that:

- **How was the Environmental storyboard used in the educational content of the French curriculum in the secondary school in 12th grade?**

The outcomes of the initial inquiry elucidated the utilisation of Environmental Storyboards within the framework of the French secondary curriculum, particularly in the context of 12th-grade education. The investigation revealed several noteworthy observations:

Environmental Storyboards were prominently integrated into the educational regimen of 12th-grade students within the French curriculum, serving as pivotal resources to heighten awareness regarding environmental issues and their ramifications.

These instructional aides were strategically interwoven into the curriculum, often complementing textbook content or as autonomous modules dedicated to specific environmental phenomena or events.

Environmental Storyboards incorporated various visual and textual components, including photographs, diagrams, textual narratives, and interactive elements, to captivate student interest and facilitate comprehension.

The narrative structure of these instructional materials was meticulously crafted to present information logically and coherently, guiding students through an exploration of the causes, effects, and potential resolutions of environmental challenges.

Moreover, the Environmental Storyboards underscored the interconnected nature of environmental issues with broader social, economic, and political contexts, prompting students to engage in critical analysis and reflection. Incorporating Environmental Storyboards into the French curriculum exemplified a comprehensive approach to environmental education, fostering critical thinking, empathy, and active participation among 12th-grade learners.

This analysis underscores the significance of Environmental Storyboards as a pedagogical tool within the French educational framework, offering insights

into their instructional value and potential impact on student learning outcomes.

The content indicated that environmental storyboards have been prominently integrated into the French curriculum's educational system for Grade 12 students. These are pivotal resources to raise awareness of environmental issues and their implications. This result agreed with the results of Al-Hashem (2014), Moroto and Hernández (2023), Al-Soqair (2022), Baarova and Hibszer (2022). The results differed from those of the following studies: Al-Hindal, Al-Ajmi, and Jawhar (2019) and Al-Hindal Al-Fijam and Al-Shammari (2021).

This result was justified Because the French curriculum offers a more diverse and multimedia-rich learning experience, potentially enhancing student engagement and comprehension of environmental issues. It provides content through three methods: a printed book with attractive colours and a content layout according to the standards of the ecological comic story, as well as a platform where the content is provided with activated links and barcodes for easy access to the content and interaction buttons with the included digital maps, in addition to the images, were of high quality according to before and after the environmental.

The results of the second question:

Which states that:

- **How was the Environmental storyboard used in the Kuwaiti curriculum educational content in the secondary school in 12th grade?**

The findings about the second research question, which explores the utilisation of Environmental Storyboards within the Kuwaiti curriculum at the 12th-grade level, are as follows:

- **Limited Presence:** Environmental Storyboards in the Kuwaiti curriculum are less pervasive than their counterparts in the French curriculum. This observation underscores a potential disparity in integrating instructional materials between the two educational systems.
- **Focus on Local Phenomena**: When Environmental Storyboards are incorporated into the Kuwaiti curriculum, they predominantly centre around significant environmental events or phenomena relevant to Kuwait, such as Kuwait wellfires. This localised focus suggests an attempt to tailor educational content to address region-specific environmental challenges.
- **Lack of Depth and Interactivity:** Unlike the French curriculum, the Kuwaiti curriculum's use of Environmental Storyboards lacks depth and interactivity. Visual elements are often confined to static photographs or diagrams, with minimal incorporation of textual narratives or interactive features. This limited engagement may hinder students' comprehension and engagement with environmental issues.
- **Simplistic Narrative Structure:** Environmental Storyboards in the Kuwaiti curriculum typically adopt a more straightforward narrative structure, providing basic information about environmental events without delving into broader socio-political contexts or implications. This simplistic approach may overlook opportunities to foster critical thinking and interdisciplinary understanding among students.
- **Supplementary Value:** Despite the limitations, including Environmental Storyboards in the Kuwaiti curriculum is a valuable supplementary resource to

traditional instructional materials. While their presence may be limited, they offer students additional perspectives on environmental issues and contribute to raising awareness about local environmental challenges.

Kuwaiti and French curricula vary in Environmental Storyboard integration and depth, with Kuwait needing enhancements in interactivity, content, and educational alignment.

The content indicated that environmental storyboards are supplementary to the Kuwaiti curriculum. However, there is room for improvement regarding interactivity, depth of content, and alignment with broader educational objectives. This result agreed with the results of Al-Otaibi (2016), Al-Hindal, Al-Ajmi, and Jawhar (2019), and Al-Hindal Al-Fijam and Al-Shammari (2021). The results differed from those of the following studies: Al-Hashem (2014), Moroto and Hernández (2023), Al-Soqair (2022), Baarova and Hibszer (2022). This result was justified Because Devoting content to environmental knowledge in depth according to a long conceptual narrative without leaving room to exercise a space of scientific and critical thinking on environmental issues, in addition to the lack of technology in displaying content without a platform that provides content interactively, as well as the lack of audio narration and music to achieve a kind of environmental empathy towards issues and the formation of complete awareness.

The results of the third question:

Which states that:

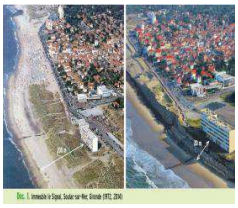
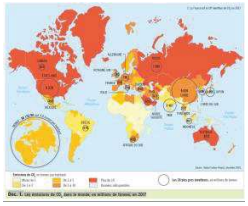
- How do semiotic elements in environmental storyboards convey educational content in French and Kuwait secondary school curricula?

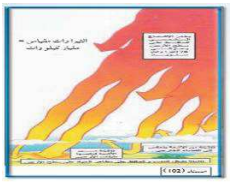
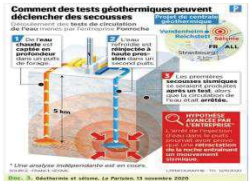
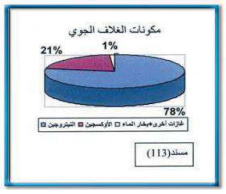
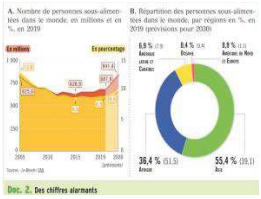
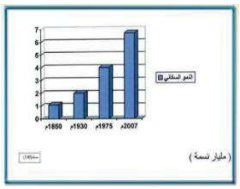
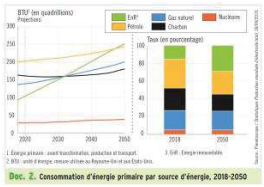
a. iconography

A detailed examination of iconography representation in environmental storyboards within the French and Kuwaiti curricula revealed significant disparities in quality and effectiveness.

Table (8)

Comparison of the representation iconography in the contents of the French and Kuwaiti curriculum

Element	Kuwaiti	French	Note
Real-World Images			– **In the Kuwaiti content, defects have appeared as follows:** • Put a frame around the photo • In-frame writing • Lack of colour quality – **In the French content, In addition to the flaws in the Kuwaiti content,** • distinguish the images of the event before and after the fact • The photo is labelled - below it with the numbering
Infographics	**Not available**		– **In the Kuwaiti content, defects have appeared as follows:** • Not available – **In the French content, In addition to the flaws in the Kuwaiti content,** • The size is proportional to the content, and The colours are of high quality • Symbols and warning signs • The infographics are labelled with numbering
Maps			– **In the Kuwaiti content, defects have appeared as follows:** • Put a frame around the map • Write inside the frame in the form of text boxes • Lack of colour quality and drawing accuracy • Lack of map keys – **In the French content, In addition to the flaws in the Kuwaiti content,** • Interactive buttons and Putting circles on events with statistical numbers

Diagrams			– **In the Kuwaiti content, defects have appeared as follows:** • Putting a frame around the outline weakens the consistency of the content • Write inside the frame in the form of text boxes and Lack of colour quality and drawing accuracy – **In the French content, In addition to the flaws in the Kuwaiti content,** • Multi-color and The Diagram caption are clear and consistent with statistical numbers
Charts			– **In the Kuwaiti content, defects have appeared as follows:** • Representing data in only one circular format • Putting a frame around the Chart • Too little time to represent data Chart – **In the French content, In addition to the flaws in the Kuwaiti content,** • Multiple data representation and Multi-color and The Chart caption is clear and consistent with statistical numbers
Graphs			– **In the Kuwaiti content, defects have appeared as follows:** • Representing data in only one circular format • Putting a frame around the Graph And Too little time to represent the data Graph – **In the French content, In addition to the flaws in the Kuwaiti content,** • Multiple data representation and Multi-color and The Graph caption is clear and consistent with statistical numbers

The representation iconography in French and Kuwaiti curriculum contents was compared, revealing significant discrepancies in quality and effectiveness. Kuwaiti materials displayed several shortcomings, including framing around photos, in-frame text, and color quality deficiencies. Conversely, French content addressed these issues while introducing distinguishing features for event images, labelling photos with numbering, and ensuring proportional size and high color quality. Furthermore, French infographics were labelled with numbering, included symbols and warning signs, and featured interactive elements and event circling with statistical data. Kuwaiti maps suffered from framing issues, lack of text box writing, color inaccuracies, and absence of map keys, whereas French maps improved on these

aspects and introduced interactive buttons. While Kuwaiti diagrams exhibited consistency issues due to framing and text box usage, French diagrams demonstrated clarity through multi-color schemes and clear, statistically aligned captions. Similarly, Kuwaiti charts and graphs relied solely on circular formats and framing, whereas French counterparts incorporated multiple data representations and multicoloured schemes with clear, statistically aligned captions. These findings underscore Kuwaiti curriculum developers' need to address these deficiencies to enhance educational content quality and effectiveness.

b. Activities

The comparison of Bloom's Cognitive Levels in the environmental storyboard questions from the French and Kuwaiti curricula offers critical insights into the pedagogical approaches adopted by both educational systems. This comparative analysis sheds light on the cognitive demands imposed on students and how these questions foster higher order thinking skills.

1. **Similarities**: Both questions demonstrate a diverse range of Bloom's cognitive levels, indicating a comprehensive instructional strategy to facilitate deep learning. Notably, the French and Kuwaiti questions incorporate remembering, understanding, analysing, and evaluating elements, encouraging students to engage in multifaceted cognitive processes. Moreover, the questions in both curricula progress beyond mere recall, prompting students to apply, analyse, and evaluate information in varied contexts. This progression is crucial for cultivating critical thinking skills and encouraging students to explore the complexities of real-world environmental issues. Additionally, both sets of questions underscore the relevance of classroom learning by connecting it to practical environmental

challenges, thereby fostering critical thinking and application beyond the confines of the classroom.

2. **Differences:** Despite these similarities, notable differences exist in how the French and Kuwaiti questions target higher-order thinking skills. While the French questions emphasise higher-order skills such as synthesis and comparison/contrast, particularly in questions 4 and 6, the Kuwaiti questions prioritise applying knowledge over critical evaluation or synthesising alternative solutions. Furthermore, the French questions tend to be more open-ended, requiring students to draw conclusions and express their perspectives, as seen in questions 4 and 5. In contrast, Kuwaiti questions often prescribe specific answer formats, such as tables or summaries, limiting students' creative expression and independent thought opportunities. Additionally, while both sets of questions delve into the analysis of environmental consequences, the French questions offer a more nuanced exploration of complex cause-and-effect relationships and situational contexts, indicating a deeper level of critical engagement than their Kuwaiti counterparts.
3. **Targeting Higher Thinking Skills:** In summary, the French curriculum demonstrates a pedagogical approach that encourages deep analysis, facilitates the synthesis of information across diverse contexts, and empowers students to form independent judgments. In contrast, the Kuwaiti curriculum prioritises the application of knowledge, focusing on the analysis of specific consequences and the proposal of solutions while placing less emphasis on independent critique and the synthesis of alternative viewpoints. This comparative analysis underscores the need for curriculum developers in Kuwait to reevaluate their approach to environmental

education, particularly fostering higher order thinking skills and promoting independent critical thinking among students. By incorporating elements of inquiry-based learning, open-ended questioning, and opportunities for creative expression, Kuwaiti educators can enhance the quality and effectiveness of environmental education in their curriculum, ultimately empowering students to become informed, engaged citizens capable of addressing complex environmental challenges.

The comparison of iconography in French and Kuwaiti curricula revealed notable disparities. Kuwaiti materials had framing, text, and color issues, while French content addressed these and introduced enhancements like labelled photos and interactive elements. Unlike Kuwaiti, French infographics were more detailed, featuring symbols and statistical data. French maps and diagrams were more precise, and charts were more diverse than Kuwaiti counterparts. These findings emphasise the necessity for improvements in Kuwaiti educational content to match the quality and effectiveness of the French curriculum. This result aligns with previous studies that have identified disparities in the quality of educational materials between different curriculum systems. However, it differs from studies that found no significant differences in the iconography representation between curriculum contents of other countries. This discrepancy may be attributed to variations in methodologies, sample sizes, or the specific focus of the studies.

This result is justified by the systematic analysis conducted, which provided detailed insights into the specific shortcomings of the Kuwaiti curriculum compared to its French counterpart. By identifying these deficiencies, the study underscores the importance of addressing them to improve educational content's overall quality and effectiveness. Moreover,

aligning the findings with previous research on curriculum comparisons further supports the validity and reliability of the study's results.

Recommendations :

By implementing these recommendations, educational stakeholders in Kuwait and France can enhance the quality and effectiveness of environmental education, equipping students with the knowledge, skills, and attitudes needed to address pressing environmental issues and contribute to a sustainable future.

- Enhancing Environmental Education in the Kuwaiti Curriculum.
- Enriching Environmental Education in the French Curriculum.
- Improving the Design and Implementation of Environmental Storyboards.
- Promoting Cross-Cultural Exchange and Collaboration.

Suggested research :

As an extension of the findings of the study, the researchers suggest the possibility of conducting the following studies:

- Cross-Cultural Comparative Study on Environmental Education.
- Longitudinal Study on the Impact of Environmental Education.
- Qualitative Inquiry into Teacher Perspectives on Environmental Education.
- Case Study Analysis of Exemplary Environmental Education Programs.
- Impact of Digital Technologies on Environmental Learning.
- Study on the Role of Environmental Education in Addressing Climate Change.

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