



Quintessence-Based Curriculum Harmonization of a Course about Colombian History in an Undergraduate Program

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ABSTRACT

Although Colombia is promoting curriculum harmonization to align higher education with international standards, subjective interpretations often produce misalignment between intended learning outcomes and curriculum design, challenging the balance between local distinctiveness and global comparability. This paper proposes the Quintessence framework as a structured approach to reduce subjectivity by making explicit connections among learning outcomes, teaching/learning activities, and assessment evidence. Methodologically, we conducted a qualitative single-case study based primarily on document analysis of program and course materials, applying Quintessence to construct alignment mappings between program-level learning outcomes and course-level content, activities, and assessments. The approach is illustrated through the course “Colombian History in the 20th Century” in the History program at Universidad de los Andes, where the framework helps identify misalignments and gaps and supports systematic redesign decisions. Results indicate that Quintessence improves curriculum consistency and transparency by providing shared descriptors and auditable artifacts (e.g., alignment matrices) that clarify how course components contribute to program outcomes. While the study focuses on a single course, the method is transferable to other courses within the program and can be adapted to similar contexts to support globally legible curricula without erasing local educational priorities. The study also points to the need for further research on the framework’s effectiveness across diverse institutional settings and its implications for equity, cultural relevance, and holistic development in higher education.

KEYWORDS

Curriculum; harmonization; quintessence; framework.

INTRODUCTION

The Colombian government is pursuing some initiatives to globalize its higher education system. Curriculum harmonization is one of the elements of this globalization attempt, aiming to align academic programs with international standards. Curriculum harmonization is intended to make the educational offer more competitive globally, foster international collaboration and exchange, and enhance the quality and recognition of higher education institutions (MEN, 2024a; CESU, 2014; OECD, 2016; UNESCO-IESALC, 2024). Some advantages are the opportunities for the internationalization of Colombian students and faculty and the attraction of international students and scholars from other countries. Moreover, harmonized curricula support student and staff mobility, easing smoother transitions for those participating in international studies/programs (Insuasti et al., 2024). Such initiatives are also expected to draw more international partnerships and funding, contributing to the country's educational landscape's overall growth and development. Colombia aims to become a significant player in international education by promoting academic excellence and global engagement (MEN, 2024a, 2024b; OECD, 2016).

Despite such initiatives, the process has often been subjective and misaligned between intended learning outcomes and actual curriculum structures. This gap can impede the student's ability to acquire globally relevant skills and knowledge, ultimately affecting their preparedness for the international context. The subjectivity in the harmonization process may arise from different interpretations of global standards, variations in local educational policies, and the diverse needs and expectations of stakeholders such as educators, policymakers, and employers (MEN, 2019; CNA, 2020). Such factors lead to consistent curriculum design and implementation, achieving cohesive and effective alignment across institutions' challenges. The lack of clear guidelines and standardized procedures also exacerbates such issues, as each institution may approach harmonization differently. Consequently, ensuring the educational programs consistently meet national and international standards remains a significant challenge, requiring ongoing effort and collaboration among all parties involved (MEN, 2019; MEN, 2024b).

We deal with the issues in curriculum harmonization above by proposing using the Quintessence framework (Henao, 2018) for curriculum harmonization. The Quintessence framework (Henao, 2018) provides a systematic approach to aligning learning outcomes, teaching methods, and assessment strategies. We aim to develop a coherent and practical curriculum for meeting national and international standards by implementing such a framework. The Quintessence framework (Henao, 2018) is also focused on continuous improvement and feedback from all stakeholders, ensuring the curriculum remains relevant and adaptable to changing educational needs. Our approach is intended to improve the quality of education and ease international collaboration and mobility for students and faculty, ultimately enhancing the institution global competitiveness.

We develop a case study on the course "Colombian History in the 20th Century" at the Universidad de los Andes in Colombia to demonstrate how the Quintessence framework

(Henao, 2018) can be used for identifying and addressing gaps in the current curriculum. We demonstrate with our case study the effectiveness of our method for aligning course content, teaching methods, and assessments with desired learning outcomes. We also identify specific areas where the curriculum is needed to meet the intended educational goals and make necessary adjustments by applying the framework. This process is intended to guarantee the course content is relevant and comprehensive, the teaching methods are engaging and effective, and the assessment is used for accurately measuring student learning. In addition, we highlight with the case study the practical benefits of using the Quintessence framework (Henao, 2018) to enhance curriculum design, leading to a more coherent and impactful educational experience for students.

Our analysis includes the advantages of using a structured framework for curriculum harmonization, including improved consistency and transparency. We can conclude by using this framework a more coherent alignment of course content, teaching methods, and assessment with the intended learning outcomes, enhancing the overall educational experience. Our case study results about the course "Colombian History in the 20th Century" can be extended to other courses within the History program and similar programs at other universities. This approach can be applied to promote a standardized yet flexible curriculum design process adaptable to various academic contexts, ultimately fostering a more uniform and high-quality educational standard across institutions

Educational institutions can achieve a more globalized curriculum by adopting the Quintessence framework (Henao, 2018), better-preparing students for international academic and professional demands. Such approach includes further exploration of the framework adaptability and effectiveness across diverse educational settings, prompting educators and policymakers to consider its broader implications. Educational equity can be enhanced by providing consistent learning opportunities, ensuring cultural relevance by integrating diverse perspectives, and fostering holistic student development by using a comprehensive curriculum design. Finally, higher education institutions can be challenged to continually refine and adapt their curricula with our method for meeting global standards while addressing the unique needs of their student populations.

This paper is organized into six sections. The first section is this introduction. The second section includes a literature review on teaching Colombian history and the concept of curriculum harmonization. The third section involves the research aspects and materials. The fourth section includes our proposal and its associated benefits. The fifth section contains a discussion in this regard. Finally, the last section involves the conclusions about the research and some future work to be addressed.

LITERATURE REVIEW

1) Evolution, Purpose, and Civic Impact of Colombian History Education

The instruction of Colombian history has been significantly changing during its development. Such changes reflect broader shifts in the socio-political landscape and educational paradigms of the country. Integrating Colombian history into the national curriculum aims to foster a deeper understanding of national identity and socio-political dynamics among students. Some studies underscore the evolution of this curriculum and its impact on the historical consciousness and civic engagement of the students.

Both national educational reforms and international trends in history education have significantly influenced the development of the Colombian history curriculum. According to Ocampo (2016), the curriculum has progressively shifted from a traditional narrative primarily focused on political and military events to a more inclusive approach encompassing social, cultural, and economic histories. Such a shift is intended to give the students a more comprehensive understanding of the past, encouraging critical thinking and analytical skills. A fuller picture of the multifaceted history of Colombia can be achieved by including diverse historical perspectives, enabling students to connect historical events with contemporary issues.

The Colombian history curriculum includes the perceptions of the students about national identity and citizenship. Nieto and García (2019) argue a well-rounded history education can foster a sense of belonging and civic responsibility among students. Students can be better equipped to appreciate contemporary social issues and participate actively in democratic processes when they can understand the diverse and complex history of Colombia. The connection between historical understanding and civic engagement is linked to the importance of history education in cultivating informed and active citizens.

Further research is needed to explore the long-term impacts of the Colombian history curriculum on the historical understanding and civic engagement of the students. Castillo (2020) suggests longitudinal studies could provide valuable insights into the way the historical consciousness of the students evolves while the role of history education is shaping their civic identities. Such research could inform future curriculum development and educational policies, ensuring the evolution of history education continues for achieving the benefit for students and society.

2) Pedagogical Approaches and Persistent Implementation Challenges

Some pedagogical proposals are focused on active learning and critical engagement with historical sources, representing a notable advancement in history education. Saldarriaga and Pérez (2018) discuss the implementation of inquiry-based learning in Colombian classrooms, where students engage in historical inquiry, debate, and reflection. The understanding of historical events is enhanced with this method and essential skills such as evidence-based reasoning and empathy are promoted. Educators aim to develop a more dynamic and participatory form of learning beyond rote memorization by involving students in historical investigation.

Despite such progress, some challenges persist in effectively implementing the Colombian history curriculum. Gómez and Arbeláez (2017) identify issues such as insufficient teacher training, lack of resources, and varying levels of institutional support. Such challenges often result in inconsistent curriculum delivery across different regions and schools, affecting the overall quality of history education. The disparity in resources and support highlights the need for targeted interventions to ensure all students receive a high-quality history education, regardless of their geographic location and socioeconomic status.

In addition, the evolution of Colombian history education is reflected in broader socio-political changes and is aimed at fostering a deeper understanding of students' national identity. While significant progress has been made in developing a more inclusive and engaging curriculum, challenges still need to be addressed in its effective implementation. Ongoing research and targeted interventions are essential to address such challenges and maximize the potential of history education to shape informed, engaged citizens. Curriculum proposals involving a harmonization approach can address such situations (Komenda et al., 2014).

3) Curriculum Harmonization: Definitions, Objectives, Strategies, Challenges, and Examples

Curriculum harmonization is a strategy to create a cohesive and consistent curriculum across various educational institutions and programs. It is also intended to ensure the uniformity of academic standards and learning outcomes, enhance education quality, and ease student mobility. Educational systems can provide students with a more equitable learning experience by harmonizing curricula, regardless of their geographical and institutional affiliations. We review in this Section the literature on curriculum harmonization, focusing on its definitions, objectives, strategies, challenges, and outcomes.

Curriculum harmonization also refers to aligning curricula across different educational contexts for ensuring consistency in academic standards and learning outcomes (Donnelly & Fitzmaurice, 2005). This alignment aims to provide equitable learning opportunities for all students, irrespective of their geographical and institutional affiliations (Witte, 2006). The concept of curriculum harmonization is rooted in the need to create a level playing field where all students can benefit from high-quality learning experiences. Educational institutions can ensure that students receive the same quality of education by standardizing curricula, which is crucial for their academic and professional development.

One of the primary objectives of curriculum harmonization includes ensuring uniformity in educational standards, easing student mobility and credit transfer, promoting collaboration among educational institutions, and enhancing the quality and relevance of education. Uniform educational standards help to maintain a consistent level of education across different institutions, easing for students to transfer credits and continue their education at different institutions without facing significant discrepancies in their learning outcomes. Furthermore, curriculum harmonization encourages collaboration among educational institutions, fostering a sense of community and shared goals in the education sector.

Some strategies have been employed to achieve curriculum harmonization. According to Knight (2004), such strategies include the development of standard curricula and syllabi, establishing joint degree programs, implementing standardized assessment and evaluation methods, and collaborating in teaching and research activities. Such strategies require the involvement of multiple stakeholders, including educators, policymakers, and industry representatives to ensure the curriculum meets the needs of all parties involved. Knight (2004) emphasizes the importance of stakeholder involvement in the harmonization process to ensure the curriculum is relevant, up-to-date, and aligned with industry standards.

Despite its benefits, curriculum harmonization faces some challenges. One of them is the resistance to change from educators and institutions accustomed to their traditional curricula (Witte, 2006). This resistance can stem from various factors, including a need for more awareness about the benefits of curriculum harmonization, concerns about the loss of institutional autonomy, and the perceived difficulty of implementing new curricula. Differences in educational policies, cultural contexts, and resource availability can also hinder harmonization (Teichler, 2004). Such differences can create significant barriers to successfully implementing harmonized curricula, requiring careful consideration and planning to overcome.

Another challenge is related to the alignment of assessment and evaluation methods. The creation of standards among such methods across different institutions requires significant effort and coordination (Donnelly & Fitzmaurice, 2005). Assessment and evaluation are critical components of the education process, as they provide valuable feedback on student learning and information about instructional practices. Ensuring such methods are consistent across institutions is essential for maintaining the quality and integrity of the education system. However, this alignment can be challenging, requiring substantial stakeholder collaboration and negotiation.

The successful implementation of curriculum harmonization can lead to several positive outcomes. According to Donnelly and Fitzmaurice (2005), harmonized curricula can enhance the quality of education by ensuring all the students receive a consistent and high-standard education. Additionally, it can promote student mobility, allowing students for transferring credits and seamlessly continue their education across different institutions (Knight, 2004). The mobility is essential in an increasingly globalized world, where students need to be able to pursue educational opportunities across different countries and regions.

Furthermore, curriculum harmonization can foster collaboration and exchange of best practices among educational institutions, leading to continuous improvement in teaching and learning processes (Teichler, 2004). Educational institutions can enhance their instructional practices and provide better student learning experiences by sharing resources, expertise, and experiences. This collaboration can also lead to the development of innovative teaching methods and curriculum designs to be adopted by other institutions, further enhancing the quality of education.

The European Higher Education Area (EHEA), established by means of the Bologna Process, is one example of the curriculum harmonization. The EHEA is aimed to creating a common framework for higher education across Europe, easing student mobility and ensuring the comparability of qualifications (Witte, 2006). The Bologna Process has led to the adoption of a three-cycle degree structure (bachelor, master, and doctoral degrees), the establishment of the European Credit Transfer and Accumulation System (ECTS), and the implementation of quality assurance standards (Knight, 2004). Such measures have significantly contributed to the harmonization of European higher education, making it easier for students to study and work across different countries. Another example is the ASEAN University Network (AUN), which promotes higher education cooperation among Southeast Asian countries. The AUN has developed the ASEAN Credit Transfer System (ACTS) for easing student mobility and harmonizing curricula across member institutions (Teichler, 2004). The AUN is aimed to enhancing the higher education quality of the region by establishing common standards and frameworks and promoting regional integration and cooperation.

Thus, curriculum harmonization is a crucial strategy for ensuring the quality and consistency of education across different institutions and regions. Despite the challenges, its successful implementation can lead to significant benefits, including enhanced educational standards, increased student mobility, and improved collaboration among educational institutions. Continued research and collaboration are essential to address the challenges and realize the full potential of curriculum harmonization. Educational institutions can work together for creating a more equitable and effective education system and meeting the needs of all students.

4) From Macro/Meso to Micro/Nano: Gaps and the Need for a Standardized Method

Educational systems have macro, meso, micro, and nano scales coming from an international educational proposal (i.e., UNESCO). Such scales should be also considered by a Ministry of Education in a country in institutional educational projects (van den Akker, 2003) linked to curriculum harmonization. Thus, good inception of curricular harmonization processes starts with analyzing the learning outcomes of specific courses in alignment with the learning outcomes proposed by the academic program grouping such courses (Milaj & Stepan, 2022).

The aforementioned proposals are intended to harmonize curriculum in a macro/meso scale and in this way, they are too general and subjective to the features of the programs involved. This subjectivity leads to misalignment between the learning outcomes of the programs and the elements of the courses belonging to them. Such elements are avoided at the macro/meso level because they usually refer to the details of the internal practices of the courses, while the proposals include policies and high-level definitions of the curriculum harmonization. In fact, all the proposals we discuss in this Section are subjective in nature, and they avoid the detailed information about the courses and how they can be related to the learning outcomes of the program and, consequently, they lack methods for defining the curriculum harmonization at the micro level. In absence of such methods, the policies and high-

level elements of the programs and institutions lack an objective way to be translated into the detailed elements of the curriculum itself, hence generating a gap. Such a gap means that the students should lack the skills and knowledge they require for navigating into a completely harmonized environment, even though the policies and high-level elements are well-defined.

The absence of methods for materializing curriculum harmonization at the micro/nano level also hinders the interpretation the different stakeholders (educators, policymakers, employers, etc.) should generate from the global standards. For example, even in the presence of some of the aforementioned proposals, we still find misalignment between the contents of the courses and the intended needs of the companies from the new professionals. If the global standards are well-defined and their path to the programs and the courses is clear, such misalignment should disappear. Another example is the misalignment in the courses of two programs with the same/similar name coming from two different countries even working with the same global standard. Again, in absence of the methods for objectively harmonizing curricula, the interpretations of the different institutions should be completely different.

The need for a standardized way to deal with curriculum harmonization led us to propose in the remaining Sections of this paper a method and a case study. We select Quintessence (Heno, 2018) as the framework for managing the method and the case study, because its standard elements help us to overcome the subjectivity of the process.

This study examines how curriculum harmonization practices shape the design and delivery of Colombian history instruction. It proposes and applies a standardized method—operationalized with the Quintessence framework—to align course-level elements (learning outcomes, content, activities, and assessments) with program-level outcomes, and evaluates its feasibility as well as its effects on alignment and intended student outcomes, notably historical consciousness and civic engagement.

The research asks: (1) to what extent current course syllabi and assessments in Colombian history align with program-level learning outcomes; (2) whether applying the proposed method increases alignment between course elements and program outcomes relative to baseline/prior practice; (3) how instructors and coordinators perceive the clarity, usability, and workload of the method in routine curriculum work; and (4) what changes, if any, are observed in proxy indicators of student outcomes (e.g., measures of historical consciousness and civic engagement or aligned assessment artifacts) following implementation.

If the design is confirmatory, the study tests the following hypotheses: courses that implement the method will exhibit higher post-implementation alignment scores than at baseline and then comparison courses not using the method; variability in alignment across courses within the same program will decrease after implementation; and higher alignment scores will be positively associated with student outcome indicators related to historical consciousness and civic engagement.

METHOD AND MATERIALS

Research Design

This study uses a qualitative single-case study design to support an in-depth exploration of curriculum harmonization within a bounded setting—specifically, one undergraduate program and one course within a higher education institution. Case studies are appropriate for answering “how” questions in contemporary contexts where researchers do not control behavioral events and where documentary evidence is central (Yin, 2018). This design allows rich, contextual understanding of the curriculum structures and the practical implications of applying a structured harmonization framework in situ (Stake, 1995).

Research process

Following established guidance for case-study inquiry, the research process proceeded through the following stages: (1) defining the research question—how program learning outcomes can be harmonized objectively with course-level syllabus elements; (2) selecting the method (a single-case study), given the focus on a representative/typical case and the suitability of documentary evidence for the problem; (3) selecting the case (Universidad de los Andes, History program; and the course “Colombian History in the 20th Century”); (4) selecting the operational framework and representational method (Quintessence) to reduce subjectivity by making curricular elements explicit and comparable; and (5) constructing and applying an alignment procedure to relate program-level learning outcomes to course-level practices, activities, and assessment artifacts.

Data Collection Tools

Data collection relied primarily on document analysis. We examined publicly available curricular and institutional documents related to the selected program and course, including the History program description and the course syllabus for “Colombian History in the 20th Century” (2024-1). Notes were documented during review sessions to capture salient linguistic and curricular elements (Emerson et al., 2011). In addition, we used linguistic/computational analysis to support systematic extraction of key elements (e.g., learning-outcome components; practices, activities, work products) from the program profile and syllabus, and to contextualize findings using relevant institutional and policy materials (Bowen, 2009). The resulting corpus consisted of digital documents and analytic memos generated during the review process.

Data Analysis Techniques

Data analysis combined interpretive qualitative analysis with structured alignment mapping supported by the Quintessence framework. First, interpretation of the documentary corpus followed principles of hermeneutical phenomenology, focusing on how texts express intended meanings in curriculum design (van Manen, 1990), and was guided by the hermeneutic circle (Gadamer, 1989). Second, we conducted thematic analysis through iterative coding to identify patterns related to curriculum structure, intended learning outcomes, and assessment evidence (Braun & Clarke, 2006). Constant comparison was used to ensure consistency of interpretations

across documents and analytic memos (Glaser & Strauss, 1967). NVivo 14 was used to organize materials and support coding, retrieval, and theme refinement (Miles et al., 2014).

To operationalize harmonization at the micro level, we represented (a) program learning outcomes and (b) course syllabus elements using Quintessence descriptors (e.g., practices, activities, work products, roles, phases). We then constructed an alignment (crosstab) matrix in which columns correspond to detailed elements of program learning outcomes and rows correspond to course activities grouped by practices; cell values record the strength of relationship (high/medium/low). This structured mapping supported identification of gaps, redundancies, and mismatches between intended learning outcomes and course design, making curricular decisions auditable and less dependent on subjective interpretation.

We adopt in our study a qualitative research design grounded explicitly within the hermeneutical approach to explore the complex and nuanced experiences of higher education. Qualitative research is chosen for its ability to provide an in-depth understanding of social phenomena from the perspectives of the participants (Creswell, 2013). The hermeneutical approach—rooted in the interpretive paradigm—allows for the detailed analysis of textual data, fostering an environment where meaning is co-constructed between the researcher and the participants (Gadamer, 1989).

The chosen research design is a case study, which is well-suited for an in-depth exploration of a bounded system, such as either a specific higher education institution or a particular academic program within that institution (Yin, 2018). Case studies have advantages for providing rich, contextual insights and exploring the dynamics within single settings (Stake, 1995). We enable with this research design a comprehensive understanding of the particularities and complexities of the case under investigation. The steps to be followed in this research design are the following (Yin, 2018):

Research question definition. How can we harmonize the learning outcomes of a program with the elements of the syllabus of a course in an objective way? We understand Curriculum harmonization in terms of aligning programs, courses, learning outcomes, and assessments across institutions or regions so they meet shared standards—making quality consistent, credits transferable, and student/teacher mobility easier—while allowing limited local adaptation.

Selecting the research method. Yin (2018) suggests that we should use case studies when we have research questions starting with how/why, when we do not require control of behavioral events, and when we focus on contemporary events (for example with documents). For these reasons we select the case study as the research method. In addition, Yin (2018) advocates for the use of a single case when the case is representative/typical. For this reason, we select a single case.

Selecting the case. The study is conducted in a higher education institution, focusing on a selected academic program and course. According to our research interests, we chose Universidad de los Andres, precisely the course “Colombian History in the 20th Century,” to

harmonize the curriculum. Official documents can be an essential source of information about educational dynamics that could support a research exercise on the dynamics of its participants (Patton, 2015). The criteria for selection included diversity in terms of academic rank, discipline, and years of experience in offering the content in the course related to Colombian history. Inclusion criteria are related to the timeline scope and pertinence; the exclusion criteria are related to topics with conceptual distance from the research topic. The study involved a higher institution, an undergraduate academic program, and the learning outcomes established in a specific course. This information source aligns with the recommendations for qualitative case studies, ensuring depth over breadth (Merriam, 2009).

Choosing data collection method. Data collection involved our method to ensure triangulation and enhance the credibility of the findings (Denzin & Lincoln, 2018). Documentation review is the primary method, allowing researchers to analyze the intended curriculum designs while providing the flexibility to probe deeper into emerging themes (Kvale & Brinkmann, 2009). We examine documents publicly available in the web regarding the program and the course we select. We also select a method for representing such information and we examined the proposal of Author1 et al. (2022), which is based in the Quintessence framework (Henao, 2018). We use the elements depicted and explained in Table 1 (see appendix) corresponding to the Quintessence framework (Henao, 2018).

Data collection. Notes are documented, capturing linguistic elements in the review during our research sessions (Emerson *et al.*, 2011). Furthermore, computational linguistics analysis is employed, examining relevant curricular materials, institutional reports, and policy documents to contextualize and corroborate our observational data (Bowen, 2009).

Data analysis. See the next two Sections. Data analysis follows the principles of hermeneutical phenomenology, focusing on interpreting texts and the meanings they attach to the designed intentions (van Manen, 1990). Thematic analysis involves systematically coding data to identify significant themes and patterns (Braun & Clarke, 2006). This process is iterative, with initial codes being refined and redefined as deeper understanding was achieved. The analysis is further guided by the hermeneutic circle of Gadamer (1989), emphasizing the dynamic interplay between the parts and the whole in the process of understanding. Constant comparison ensures that themes are consistently interpreted across different data sources (Glaser & Strauss, 1967). We manage and organize the data with the NVivo 14 software, easing efficient coding and retrieval of thematic patterns. Ethical considerations are paramount in this study. Anonymity and confidentiality are strictly maintained, with pseudonyms used in all reporting to protect identities of the participants who provided us with documentary information (Miles *et al.*, 2014). The materials used in this study included digital documentation, our notes during the review process, and NVivo software for data analysis. Relevant institutional documents, such as curricular outlines, meeting minutes, and policy documents are accessed with permission from the institution. Such materials provide a comprehensive foundation for

data collection and analysis, supporting the exploration of the lived experiences within the higher education setting.

FINDINGS

The steps one to five of our case study are covered in the previous Sections. In this Section we cover the data collection. The data analysis is covered in the next Section and the conclusion drawing is covered in the final Section. The documentation of the program selected ("History" from Universidad de los Andes) can be found in the link <https://cienciassociales.uniandes.edu.co/historia-geografia/pregrado/>. The graduated profile of the program—which we identify as “historian”—is defined as follows: “the graduated professional from the History program from Universidad de los Andes can analyze and comprehend the past and present, particularly in the Colombian and Latin American context. He/she recognizes all the human experience is in time and space and it can be explained as a process from evidences, methods, concepts, and theoretical approaches.”

The program has no explicit learning outcomes, so we can start from defining them from the graduated profile by employing linguistic analysis, in the following way:

LO1: Comprehend the Continuity and Change Process for Explaining the Diversity of Human Experience

LO2: Formulate Questions about Past and Present

LO3: Answer Questions about Past and Present by using Evidence

LO4: Communicate Answers about Past and Present

The application of the Quintessence elements to the learning outcomes lead to the following elements identified:

- LO1:
 - Comprehend Continuity Process: Activity.
 - Comprehend Change Process: Activity.
 - Explain the Diversity of Human Experience: Activity.
- LO2:
 - Formulate Questions: Activity.
 - Past: Work Product.
 - Present: Work Product.
- LO3:
 - Answer Questions: Activity.
 - Past: Work Product.
 - Present: Work Product.
 - Evidence: Resource
- LO4:
 - Communicate Answers: Activity.

- Past: Work Product.
- Present: Work Product.

Such elements are graphically summarized in Figure 1 after recognizing and classifying the elements in the different areas of concern, depending on the approach each element has in terms of the learning outcomes of the program. The elements in Figure 1 are the key concepts required to be declared to work with the learning outcomes of the program involved in this study.

We select for this case study one of the courses of the program. Particularly, we access the syllabus of the course “Colombian History in the 20th Century,” belonging to the so-called “Ciclo Básico UniAndino” in the Colombian Area. We access the document of the 2024-1 semester, created by Catalina Muñoz Rojas, and publicly available in the link: <https://uniandes.academia.edu/CatalinaMu%C3%B1ozRojas> . This material is also analyzed by employing linguistic analysis to discover the main elements related to Quintessence.

In educational settings, the term "practice" encompasses a variety of structured activities designed to facilitate learning. Such activities include teaching methods and learning strategies to achieve specific educational objectives. According to Hattie (2009), effective teaching practices are characterized by implementing instructional strategies for promoting student engagement and comprehension. For instance, formative assessments, such as quizzes and peer reviews, can provide immediate feedback, allowing students for recognizing their strengths and areas for improvement (Black & Wiliam, 1998). Moreover, collaborative learning activities, where students work together to solve problems or discuss concepts, have enhanced understanding and retention of knowledge (Johnson *et al.*, 1991).

Assessment is another critical component of educational practice, evaluating student learning and the effectiveness of instructional methods. Assessment practices can be either formative or summative, each one serving to distinct purposes within the educational process. Sadler (1989) highlights the formative assessment is designed to provide ongoing feedback for informing instructional adjustment and support student learning. Summative assessment in the form of either final exams or standardized tests is aimed to measure the extent of student learning at the end of an instructional period (Harlen & James, 1997). The integration of diverse assessment practices ensures a comprehensive evaluation of student performance and the attainment of educational goals.

The declaration of learning outcomes is the most crucial aspect of educational practice, as it clearly defines the knowledge, skills, and attitudes the students are expected to acquire by the end of a course within a program. Learning outcomes are a roadmap for instructors and students, guiding instructional activities and assessments (Biggs & Tang, 2011). Anderson and Krathwohl (2001) state that well-articulated learning outcomes should be specific, measurable, achievable, relevant, and time-bound (SMART). Such outcomes provide a framework for curriculum development and help to align teaching practices with educational standards and student needs (Bloom, 1956).

Educational practices can create a dynamic and supportive learning environment by integrating effective teaching and learning activities, diverse assessment methods, and articulated learning outcomes. This holistic approach ensures the educational goals are met and the students are equipped with the necessary skills and knowledge to succeed in their academic and professional endeavors.

The Quintessence practices can be identified just after the remaining elements are identified from the document at hand (in this case the syllabus of the course “Colombian History in the 20th Century”). We extract the following elements from the sections “Description” and “Methodology” of such document:

- Historical processes: Sub-alpha
- Attend lecture: Activity
- Read document: Activity
- Discuss document: Activity
- Solve workshop: Activity
- Lecture: Work product
- Document: Work product
- Design: Phase
- Plan Essay: Activity
- Write Essay: Activity
- Essay: Work product
- Production: Phase

The document is centered on the activities the students need to perform to pass the course. However, we need to link such activities with the graduated profile and hence we select the role “historian,” because this is the graduated role of the program, and the activities are supposed to prepare the students for that role. For this reason, the students—in the role of “historian”—performing such activities generate work products. Hence, we have the relationship “works on.”

The activities are linked to the work products and require some competencies to be performed. In this case, the initial activities require the “analysis” competency, and the final activities require the “development” competency. Also, the first activities are grouped in the activity space “design the project result” belonging to the “design” phase and the final activities are grouped into the activity space “implement the project result” belonging to the “production” phase. All the elements we identified belong to the area of concern “solution.”

The remaining element for identifying in terms of the Quintessence framework is the sub-alpha “historical processes.” This noun phrase is recognized from the syllabus as the main element for achieving the health and progress of the course. In other words, this is the dimension to be measured in terms of the activities performed and the work products

generated. This sub-alpha is linked to the area of concern “solution”, and we assign it to the alpha “result.”

The elements identified can be grouped into two practices. According to Barón (2019), the name of a practice comprise a nominalized verb (associated with the group of actions to be performed), an adjective (or a noun phrase in the role of adjective), and an object (noun phrase). The noun phrase in both practices is “historical processes.” In the first group of activities, we are dealing with the “recognition” of the historical processes (this is the nominalized verb), and we employ lectures and documents considered “evidence” of such recognition. Consequently, the first practice is “evidence-based recognition of historical processes.” In the second group of activities, we create a work product (the essay) to analyze historical processes, so the nominalized verb is “analysis,” and we search for a critical view of such processes in such an essay. Hence, the name of the second practice is set to “critical analysis of historical processes.” In Figure 2 (see appendix), we propose the representations of these two practices using the Quintessence framework related to the dynamics in the course “Colombian History in the 20th Century”.

The upper section of Figure 2 comprises evidence-based recognition of historical processes. This practice aims to identify and understand historical events and trends using systematic and evidence-based methods. The outcome of this practice is the recognition of historical processes, which are specific events and trends the history has shaped. In this context, the role of the historian is critical, as they engage with both lectures and historical documents to gather necessary information. The historian's task is to recognize and document such historical processes, ensuring they are accurately represented and understood. The design phase of this practice involves several key activities. First, historians attend lectures to gather information about historical events and contexts, providing a foundational understanding. Second, they read historical documents to collect evidence to support the recognition of historical processes; this step is crucial as it provides the factual basis for their analyses. Third, discussing such documents helps deepen their understanding and interpretation, easing a more nuanced view of historical events. Finally, participating in workshops allows historians to collaboratively apply their knowledge and analyze historical processes in a practical and interactive setting. Such activities collectively contribute to the robust recognition of historical processes based on evidence. The lower section of Figure 2 comprises critically analyzing historical processes. This practice critically examines historical events and trends to understand their implications and significance. The outcome of this practice is a comprehensive critical analysis of historical processes, offering insights into how such events and trends have been used to influence history. The role of the historian in this practice involves critically analyzing and producing scholarly work communicating their findings. Historians can effectively convey the results of their critical analyses by working on writing essays.

The production phase of this practice includes two main activities: planning and writing the essay. Planning the essay involves structuring and organizing the content based on the

critical analysis conducted. This step ensures the essay is coherent and logically presents the findings of the historian. The historian writes the essay to communicate such findings, providing a detailed account of the critical analysis of historical processes. This scholarly output is essential for disseminating knowledge and contributing to academic discourse on historical topics.

The practices of evidence-based recognition and critical analysis of historical processes are integral to studying history. The first practice focused on recognition involves gathering and analyzing evidence using lectures, reading, discussions, and workshops. This comprehensive approach ensures that the historical processes are accurately identified and documented. The second practice, centered on critical analysis, involves a deeper examination of historical events and trends, culminating in producing scholarly essays. Such essays are used to communicate the insights and analyses of historians, contributing to a broader understanding of historical phenomena. Both practices underscore the importance of rigorous, evidence-based methods and critical thinking in history, particularly in the context of lectures on Colombian history.

Once we have the representations of the learning outcomes of the program and the elements of the practices of the course by using the Quintessence framework, we need to guarantee that the learning outcomes are related to the elements of the course. Using the Quintessence framework helps us guarantee that the process is objective because we have the exact representation for leading the process. We employ a crosstab matrix where the columns contain the detailed elements of the program's learning outcomes—be advised that each element within a learning outcome is numbered for convenience—and the rows include the activities grouped by practices. We illustrate such a matrix in Figure 3 (see appendix). It is important to note that the cells display the relationship between each pair of elements, rated as high, medium, or low.

DISCUSSION

In this Section, we critically analyze the results of implementing the Quintessence framework in harmonizing the curriculum of the course “Colombian History in the 20th Century” with the learning outcomes of the “History” program at Universidad de los Andes. Beyond reporting alignment gains, we interpret what these results mean for course- and program-level practice, situate them within the broader literature on curriculum harmonization and constructive alignment, and outline realistic next steps for research and institutional adoption.

First, the results indicate that using a structured standard—specifically, the Quintessence framework (Henaó, 2018)—adds methodological rigor to curriculum work that is often fragmented or highly dependent on local conventions. By requiring explicit mappings across learning outcomes, teaching/learning activities, and assessment, Quintessence operationalizes the principles of constructive alignment (Anderson & Krathwohl, 2001; Biggs & Tang, 2011) and makes curricular coherence auditable. In our case, the alignment matrices and evidentiary rubrics helped identify redundancies (e.g., over-emphasis on political events at the expense of social and cultural histories) and omission gaps (e.g., limited assessment of historiographical

reasoning). The resulting re-balancing brought the course into closer correspondence with program-level outcomes and with recognized national and international standards, thereby strengthening quality assurance claims.

Second, the framework proved useful for diagnosing how misalignment occurs and where to intervene. Gap analyses showed that some learning outcomes were stated at higher cognitive process levels (e.g., evaluation, synthesis) than what the assessments elicited, echoing a common problem in history education where ambitious outcomes are paired with recall-oriented tasks. Guided by Quintessence, instructors redesigned activities toward inquiry, source analysis, and argumentative writing—moves supported by research on visible learning and the benefits of clear, appropriately challenging objectives (Hattie, 2009). The immediate practical implication is that harmonization should not be confined to rewriting outcome statements; it must reach the level of task design, criteria, and feedback cycles.

Third, our findings speak to a persistent difficulty in the harmonization literature: the subjectivity of interpretation and the variability it introduces (Donnelly & Fitzmaurice, 2005; Witte, 2006). Quintessence mitigated this by enforcing common descriptors and decision logs that make choices transparent and replicable. Standard forms anchored conversations between course teams and program committees, reducing reliance on tacit knowledge and personal preference. While professional judgment remains necessary, subjectivity is bounded by shared definitions and artifacts. This provides a concrete pathway for institutions seeking to move from policy rhetoric to implementable routines.

A further implication concerns educational equity. When alignment criteria and performance expectations are explicit and consistently applied, students are less exposed to idiosyncratic course demands and more likely to encounter comparable opportunities to demonstrate learning—an equity gain that harmonization aims to secure (Knight, 2004). Our case also suggests that equity is not only about standardization but also about substantive content. Purposeful inclusion of diverse historical perspectives supported connections between the 20th-century Colombian past and contemporary civic issues, enhancing relevance and identity formation (Ocampo, 2016; Nieto & García, 2019). Harmonization, therefore, should integrate local cultural-historical specificity within shared standards rather than press toward a culturally neutral minimum.

At the same time, the challenges we encountered are non-trivial. Change resistance among educators and units accustomed to traditional curricula manifested as concerns about autonomy, workload, and assessment redesign (Witte, 2006). Creating cross-course consistency in assessment practices required substantial coordination and calibration time (Donnelly & Fitzmaurice, 2005). These obstacles are typical of institutional change and point to the need for phased implementation: start with a pilot cluster of courses, build exemplars and rubrics, and then scale with structured faculty development and incentives. Explicit workload recognition for redesign, along with assessment moderation sessions, proved especially important for buy-in.

Methodologically, our single-course, single-institution case limits generalizability. Instructor self-selection and researcher involvement introduce potential expectancy or Hawthorne effects. Outcome evidence for student learning remained largely proxy-based (alignment scores, quality of assessment artifacts) rather than derived from validated measures of historical consciousness or civic engagement. Future work should adopt mixed methods designs—combining document analysis and classroom observation with student-level pre/post measures and comparison groups—to estimate effects more robustly. Inter-rater reliability for alignment ratings, moderation of common tasks, and, where feasible, quasi-experimental designs (e.g., difference-in-differences across course cohorts) would strengthen causal inferences.

For practice, we derive several recommendations from the case. (a) Embed alignment work in existing governance cycles (annual syllabus review, program accreditation updates) so it is sustained rather than episodic. (b) Provide shared design tools—templates for outcome-to-task mapping, sample analytic rubrics for historical reasoning, and banks of primary-source tasks—that reduce redesign overhead. (c) Institutionalize moderation: schedule periodic cross-course calibration of grading to keep assessment interpretations aligned. (d) Track implementation fidelity: document which Quintessence components were used, at what depth, and with what adaptations, so results can be interpreted against actual dosage. (e) Couple harmonization with capacity building: targeted workshops on inquiry-based history teaching, feedback for argumentation, and assessment literacy make the technical aspects actionable for instructors.

Finally, we note the transferability and policy relevance of this approach. Because Quintessence produces standardized artifacts (mappings, rubrics, evidentiary records), it can interface with national quality requirements and international recognition frameworks without erasing local priorities. In programs where student mobility and external recognition matter, this portability is advantageous. Yet transfer is not automatic: future research should examine multi-course and multi-institution implementations, the costs of adoption, and the degree to which harmonization gains are maintained over time. Longitudinal studies that follow cohorts across courses would clarify whether course-level alignment aggregates into program-level effects on historical thinking and civic engagement—key claims in both the Colombian policy context and the broader harmonization literature (Anderson & Krathwohl, 2001; Biggs & Tang, 2011; Knight, 2004; Hattie, 2009; Donnelly & Fitzmaurice, 2005; Witte, 2006; Ocampo, 2016; Nieto & García, 2019).

In sum, our case shows that a structured framework like Quintessence (Henoa, 2018) can convert the general promise of curriculum harmonization into concrete instructional decisions that improve coherence, make expectations visible, and support culturally relevant learning—while also revealing the organizational supports necessary for durable change. The agenda ahead is to move from successful pilots to institution-wide routines, accompanied by rigorous, mixed-method evaluation of impacts on teaching quality and student learning.

CONCLUSIONS

We proposed a method for curriculum harmonization of the elements of the course “Colombian History in the 20th Century” with the learning outcomes of the program “History” within the History Department at Universidad de los Andes in Colombia. We used the Quintessence framework (Henaó, 2018) to represent the learning outcomes of the program and the elements of the course (including practices, alphas, sub-alphas, activity spaces, activities, work products, competencies, roles, and phases) taken from the syllabus of the course. We then established a method to relate the activities of the individual course with the program's learning outcomes. This comparison allowed us to determine how the course elements can be used to support the program's learning outcomes. It also highlighted areas where different course elements better reinforce each other to accomplish the learning outcomes of the entire component.

Implementing the Quintessence framework for curriculum harmonization offered some advantages for enhancing both the design and implementation of educational programs. With its structured and formalized approach, Quintessence can be used to propose a straightforward method for aligning individual elements of a course with a program's learning outcomes. This ensures that every curriculum aspect is purposefully designed to contribute to educational learning outcomes. Educational institutions can use Quintessence to create a cohesive and integrated curriculum where each course is strategically linked to the broader aims of the program, ensuring a seamless and coherent learning journey for students.

One significant benefit of using Quintessence for curriculum harmonization is its enhanced clarity and transparency in the curriculum design, leading to objectivity. Quintessence allows for explicit representation of learning outcomes, competencies, and activities, making it easier for educators and administrators to see how each course component fits into the larger educational framework. This transparency aids the accreditation process by clearly documenting how the curriculum meets established educational standards. It also facilitates better communication among faculty members, enabling them to understand and align their course objectives with the program's goals, fostering a more collaborative and unified approach to education.

Additionally, the Quintessence framework enhances the adaptability and responsiveness of educational programs. Quintessence can support the continuous improvement and updating of course content by offering a structured yet flexible approach to curriculum design to reflect the latest advancements and industry demands. This adaptability ensures that the curriculum remains relevant and effective in preparing students for modern challenges. Moreover, Quintessence supports interdisciplinary learning integration, as its formalized structure accommodates diverse subject areas and methodologies. This integration promotes innovative educational practices, preparing students to think critically and work collaboratively across different fields, enhancing their overall learning experience and employability.

Future research should explore the long-term impacts of curriculum harmonization on student outcomes and institutional performance. Longitudinal studies could provide valuable

insights into how harmonized curricula influence students' academic and professional trajectories (Castillo, 2020). Additionally, investigating the adaptability of the Quintessence framework across different educational settings and disciplines would be beneficial. Finally, we can explore the relationship of the program's learning outcomes with either the graduated profile or even international standards by using a similar approach to the one we used in this paper. In fact, how we use Quintessence to represent different elements can be replicated to profiles, international standards, elements from different institutions, etc.

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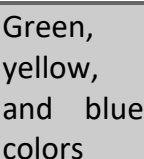




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APPENDIX

Table 1.

Quintessence elements. The Authors based on Henao (2018)

Element	Graphical Notation	Explanation
Area of Concern		A way to classify any of the elements of the representation, as follows: green related to customer, yellow related to solution, and blue related to endeavor
Practice		A way to group all the elements of a course as a set of activities and work products resulting from the educational process
Alpha		An element for measuring the progress and health of a specific endeavor. Seven alphas are recognized in Quintessence: business case and stakeholders in customer; cost, quality, requirements, time, and result in solution; and work, team, risk, and way of working in endeavor. We can also have sub-alphas related to the alphas
Activity space		A way to group activities. The values of the activity spaces are predefined in Quintessence: outline the business case, understand the business case, ensure stakeholders satisfaction, and use the project result in customer; estimate cost, define quality criteria, put in place quality processes, understand the requirements, schedule time, design the project result, implement the project result, test the project result, and deploy the project result in solution; and prepare to do the work, understand risks, coordinate the work, support the team, improve the way of working, assess project health and progress, and close the work in endeavor
Work product		The documented evidence resulting from the execution of an activity. The names of the work products are free (there are no predefined names). Also, the color is always grey





Activity		Any of the actions we perform as a part of the educational process of the course
Competency		The skills required for a role to perform an activity. The following competencies are defined in Quintessence: communication, stakeholder representation, and service orientation in customer; systemic thinking, knowledge management, analysis, development, and testing in solution; leadership, change management, collaborative work, achievement orientation, and management in endeavor
Pattern		A stereotyped element for representing any other graphical element, e.g., roles and phases
Resource		A source of pre-existent information we need in a practice. It is always white

Fig. 3. Crosstab matrix between learning outcomes from the program and a course.

Source: The Authors

COURSE LEARNING OUTCOMES	PROGRAM LEARNING OUTCOMES												
	1			2			3				4		
	1	2	3	1	2	3	1	2	3	4	1	2	3
Evidence-based recognition of historical processes													
Attend lecture	M	M	M										
Read document	M	M	M										
Discuss document				M	M	M	M	M	M	M			
Solve workshop							H	H	H	H	M	M	M
Critical analysis of historical processes													
Plan essay				H	H	H							
Write essay	H	H	H				H	H	H	H	H	H	H

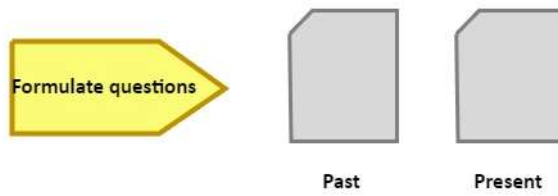
Figure 1.

Elements in the definition of Learning Outcomes of the program. The Authors

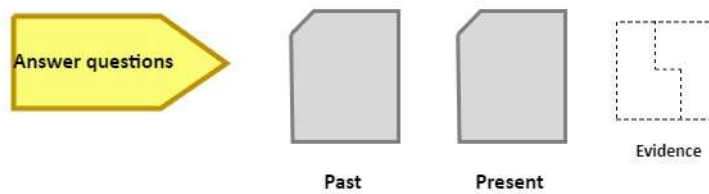
LO1: Comprehend the continuity and change process for explaining the diversity of the human experience



LO2: Formulate questions about past and present



LO3: Answer questions about past and present by using evidence



LO4: Communicate answers about past and present

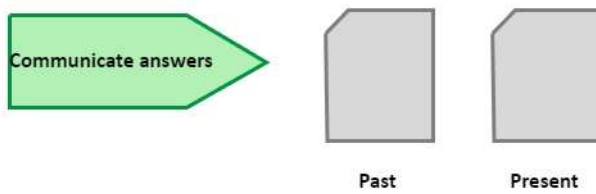


Figure 2.

Elements in the definition of Learning Outcomes of the program. The Authors

