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High School STEM Internship Program Policy Transitions during COVID-19 Pandemic

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ABSTRACT

This study analyses the impact of COVID-19 on a STEM internship program in the Philippines, focusing on policy features and policy transitions from pre- to post-pandemic years. We conducted directed policy content analysis for policy documents, interviews, and a self-narrative. The STEM & Research Internship Program (SRIP) feature a central guiding document for policies which demonstrate alignment with the school system's vision and mission, core values, and strategic goals, with periodic revisions and specific guidelines crafted at the campus level to uphold these principles. Notable features include flexibility in internship completion and adaptability to different learning modalities. Some policy areas for development include featuring local laws and partner agency benefits. Policy transitions highlight the program's flexibility and commitment to student well-being. This study emphasizes how policy and policy transitions in the internship program demonstrated adaptability amidst the pandemic to provide quality STEM work-based learning experiences to students.

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Introduction

The COVID-19 pandemic has had a profound impact on various aspects of society, including education, leading to a widespread shift towards online and virtual learning as an alternative to traditional classroom instruction (Khalil et al., 2021; Lockee, 2021). This transition has prompted educators to reconsider their methods of assessing learning outcomes, resulting in

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significant changes to assessment strategies (Johnson et al., 2020). Additionally, the pandemic has created an opportunity for educational reforms that were previously proposed but not fully implemented. These reforms include the development of a more flexible and personalized curriculum, an emphasis on student-centered, inquiry-driven, authentic, and purposeful teaching methods, and a blend of synchronous and asynchronous learning approaches (Zhao & Watterston, 2021). The pandemic has provided opportunities to implement substantial changes in the field of education, pushing for innovative approaches and reforms that were long overdue.

Student internships in the Science, Technology, Engineering, and Mathematics (STEM) field serve as a valuable method for cultivating a highly skilled workforce tailored to the demands of the global marketplace (Ainslie & Huffman, 2019). In the Philippines, the Department of Education defines "work immersion" as a hands-on experience or work simulation allowing learners to apply their competencies and acquired knowledge relevant to their chosen track (Department of Education Philippines, 2017). Research has demonstrated that STEM internships contribute to students' increased confidence in their abilities upon completing their internship programs (Martinez et al., 2015). Virtual internships in the STEM field are also advocated to promote inclusion for students whose home institutions may lack such opportunities (Hruska et al., 2022). Policies related to STEM internships play a pivotal role in high schools, fostering an inclusive learning and skill development environment (Young et al., 2017). Internship policies are equally important for teacher training as they are for student skills development. STEM education initiatives such as internships have been recognized to stimulate both regional and national economies and has prompted policymakers and funding agencies to reconsider the recruitment, preparation, and retention of STEM teachers (Schuster, 2013).

The investigation of the impact of COVID-19 on various education policies, including internships, has been the focus of many recent studies (Tarkar, 2020). The formulation and implementation of educational policies by schools play a crucial role in transforming a nation's educational system and enhancing the overall standards of its educational institutions, particularly in response to challenges such as the pandemic (Zancajo et al., 2022). With policymakers and stakeholders emphasising higher quality school performance and services (Viennet & Pont, 2017), it is crucial to analyse policy features and transitions made during the crucial years through the pandemic.

Purpose of the Research

This research aimed to analyse the policies governing a STEM internship program in a selective high school in the Philippines, covering the years 2019 to 2022, including pre-pandemic, pandemic, and post-pandemic periods. The objective is to understand how high school STEM internship program policies evolved during the pandemic-related adjustments. The study investigates the components of these policies and their transformations during

critical implementation years, utilizing policy document analysis, interviews with program administrators, and a self-narrative from an internship coordinator.

Literature Review

STEM Internships in High School

Internship opportunities in STEM have gained international recognition as a significant criterion for assessing the success of STEM-focused high schools (Erdogan & Stuessy, 2015). Research conducted by Dawes et al. (2015) surveyed freshman college students who were pursuing degrees in STEM-related fields to understand the factors influencing their choice of STEM majors. Their findings highlighted the substantial influence of STEM teachers, parents, and engagement in STEM activities such as science fairs, STEM clubs, and STEM internships on students' decisions to major in STEM disciplines.

It is evident that internships play a role in shaping the career orientations of high school students, although the nature of this impact varies based on individual preferences (Papadimitriou, 2014). Papadimitriou (2014) discussed distinct patterns of responses among different groups of students. Dynamic science students, those who transitioned between various science careers during high school, showed the most significant response to internships in terms of fostering retention in the science pipeline. On the other hand, individuals who shifted from non-science to science career paths expressed the strongest influence of internships on their college major and career choices. Science-to-non-science career changers consistently reported limited impacts of internships on their decisions, while static science students found internships highly influential in shaping their career choices and promoting retention. Lastly, static non-science students acknowledged the general impact of internships on their educational and career trajectories.

Pandemic effects on education and internships

The COVID-19 pandemic drove significant transformations across various educational domains. To address these pandemic-related challenges, international organizations emphasize the need for structural policy reforms (Zancajo et al., 2022). In physics education, the shift to online learning prompted innovative approaches such as using slow-motion videos and everyday objects for home experiments (Campari et al., 2021), which received positive feedback from students. Similarly, hands-on data collection in online labs boosted learning achievement (Klein et al., 2021). Additionally, COVID-19 accelerated digital and tech integration in math education (Alabdulaziz, 2021). In medical education, unique challenges and innovations emerged in response to the pandemic (Papapanou et al., 2022). COVID-19's impact affected science education (Baptista et al., 2020; D'Souza et al., 2020; Seaman et al., 2021) and the arts and humanities (Aristovnik et al., 2020; Sabol, 2022; Yong et al., 2022).

The extensive implications of STEM internship programs and policies necessitate comprehension of the impact of COVID-19 on policies and the subsequent transitions. Recent studies have shed light on the repercussions of the COVID-19 pandemic on career development programs for STEM students, specifically those encompassing internships (Desrochers et al., 2020; Duprez et al., 2021; Mitra et al., 2022; Slater & Cojanu, 2021). It has been reported that in certain instances, the pandemic generated fresh prospects for interns, while in other instances, it resulted in either an increased workload or a constriction of responsibilities, thereby narrowing the scope of interns' leadership roles (Snodgrass Rangel & Butcher, 2023). Thus, it becomes important to analyse the high school STEM internship policies in detail and highlight the strengths and weaknesses of the program that were crucial during the COVID-19 transition period.

The Philippine context

In the Philippines, internships or work immersions have evolved in accordance with 1) the guidelines during crisis situation issued by the Department of Education (DepEd) for the majority of the Philippine K-12 student population as Memorandum DM-CI-2020-085, and 2) the continuity of operations plan of the Philippine Science High School System under the Department of Science and Technology (DOST), issued as Board of Trustees Resolution No. 2020-05-18. Recent studies reported the policy response of the education sector in the Philippines (Ancho, 2020; Eviota & Maboloc, 2021; Joaquin et al., 2020; Toquero, 2020, 2021; Tria, 2020). In (Ancho, 2020), five policy directives issued by the Department of Education (DepEd) in response to the COVID-19 pandemic were studied. Through the analysis of each policy directive, it was reported that the majority of the directives primarily revolve around health-related matters, often in collaboration with the Department of Health (DOH) and other relevant agencies, as well as administrative aspects. There is a noticeable lack of attention to specific aspects and contexts related to teaching and learning. It appears that the primary focus of these policy directives is centred on activities beyond the traditional classroom setting.

In Joaquin et al. (2020), policy responses of the higher education sector of the Philippines due to COVID are compared with the responses in countries such as Indonesia, Thailand and Vietnam. It was reported in this study that while Philippine Higher Education Institutions (HEIs) have made commendable efforts in introducing innovative learning methods and technology-driven education delivery, there persist certain gaps and challenges in their response strategies. The study underscored the importance of shaping policy responses and educational innovations based on a more profound comprehension of distance education, while also remaining attuned to the evolving demands of the contemporary era. Toquero (2020) suggested that to adequately address the challenges posed by the pandemic, universities must undertake a comprehensive re-evaluation of their curriculum strategies, with a particular focus on preparing for the transition to online learning. Simultaneously, campus medical health professionals can play a pivotal role in designing health management protocols and resources that promote adherence to environmental health guidelines, even beyond the confines of the academic institution. This conclusion underscores the importance of policy

implications, advocating for the development of environmental policies that can fortify the health management systems within the university setting.

While the previous studies mentioned above offered valuable insights into the broader context of COVID-19 policy responses within the education sector in the Philippines, there exists a pressing need for more in-depth exploration within the specific domain of high school STEM internship policies and their response to the COVID-19 pandemic. Therefore, in this work, we aimed to provide a detailed overview and analysis of how policies governing a STEM internship program at a selective high school in the Philippines, have evolved over time.

Theoretical Framework

This study uses a modified framework using Cardno's (2018) analysis tool of three perspectives, expanding on the third perspective using Zinth's model policy components, subsequently described. This modified framework is deemed suitable for this study's purpose to understand policy components and trace policy transitions during the pandemic.

Cardno's (2018) policy content analysis tool. Cardno (2018) discusses policy as a guideline for action rooted in a belief system linked to specific values and political ideologies. For educational leaders, engaging with policy is a means to drive change, with the aim of influencing conditions and pursuing improvements in education and society. Policy document analysis serves as a research method to explore the content and underlying factors within policy documents. A useful tool provided by Cardno (2018) allows the researcher to select several policies for analysis using three perspectives:

1. Policy purpose - the policy's purpose, guiding values, and relevance to local or national strategic and quality concerns,

2. Policy construction - the policy's construction, its component elements for legal compliance, the responsible entities for policy development, and stakeholder involvement in the development process, and

3. Implementation and impact - the overall impact, current strengths, and positive aspects, as well as current concerns and negative aspects of the policy in practice. This perspective will be discussed using Zinth's (2018) model policy components for work-based learning. Zinth (2018) proposed five key components for a comprehensive internship program policy approach, aimed at ensuring that high school students have access to high-quality internships that prepare them for future post-secondary education and employment opportunities. These include state and regional coordination, access, finance, program quality, and graduation credit.

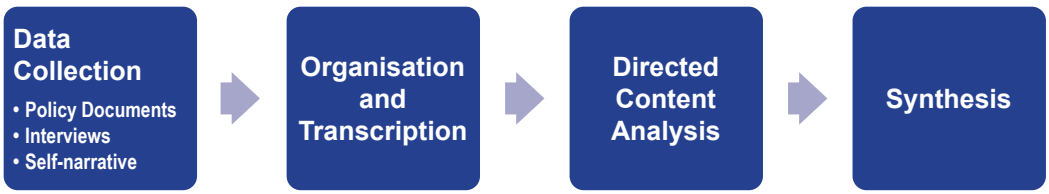
Methodology

Design and Method

This research utilized a single case study to conduct a qualitative investigation to gain a deeper understanding of the changes that the STEM & Research Immersion Program (SRIP) underwent amidst the COVID-19 pandemic. To achieve this, we conducted a directed content analysis of policy documents governing the program, following the recommendations of Assarroudi et al. (2018). Semi-structured interviews of school leaders and a self-narrative of the internship program coordinator were also conducted (Figure 1).

Figure 1

Study Design and Methods



Materials for Directed Content Analysis

Consent to access and analyse organisational policy documents were acquired from the relevant school authorities. The policy documents used for directed content analysis included the following: Quality Management Systems (QMS) Manual (QMS) for the Internship Program, Quality Management Systems (QMS) Manual for School Offering, Board of Trustees (BOT) Resolutions, System Executive Director Memoranda, and Campus-level Policies. All documents considered were in effect within 2019 to 2022 as defined by the scope of this study. These documents were carefully read and coded using the educational policy analysis tool by Cardno (2018) and the policy components identified by Zinth (2018) as main categories.

Participants for Interviews and Self-narrative

School leaders who occupied key positions and played pivotal roles in SRIP consented for recorded online interviews. They were purposefully selected due to their extensive knowledge of program policies and direct involvement in program implementation. The participants were (1) the School Campus Director, who is responsible for overseeing school operations and is the approving authority for all campus-level SRIP policy reiterations; (2) the Curriculum and Instruction Division (CID) Chief who leads the teacher population in curricular and co-curricular activity implementation, works with the SRIP coordinator through the assistant division chiefs, and monitors teachers in their various roles as visiting chaperones or internal

mentors; (3) the Assistant CID Chief for Student Affairs who supervises all co-curricular activities including SRIP and directly evaluates the employee performance of the SRIP coordinators; and (4) the Subject Area Coordinator who supervises teachers in the delivery of STEM courses and the internal internships. (5) The SRIP internship coordinator, who co-authors this paper, wrote a self-narrative to answer the same questions provided to the interviewees. These participants collaborated closely through the pandemic years to ensure the successful implementation of the internship program (Figure 2).

Results and Discussion

The Internship Program

The STEM & Research Immersion Program (SRIP) is an integral component of the K-12 curriculum within a selective STEM high school system in the Philippines. It mandates a one-time, two-to-three-week internship for high school students, which can be undertaken during the school breaks preceding Grades 10 through 12. Consequently, the process of preparing for this program commences in Grade 9 and continues until the student successfully completes the program or reaches Grade 12.

As part of the program, students are required to engage in a minimum of 80 hours of official work-based learning at a partnering STEM or research agency. These internships are aligned with students' individual interests and their chosen fields of specialization within the STEM disciplines for both Grades 11 and 12.

SRIP aims for students to achieve five primary objectives:

1. Acquire STEM and Research Knowledge: Gain proficiency in STEM and research concepts and laboratory skills.

2. Understand Agency Operations: Comprehend the application of science and engineering principles in the day-to-day functioning of partner agencies.

3. Engage in Research Projects: Actively participate in ongoing research initiatives and foster interactions with researchers, scientists, and technical experts.

4. Identify Future Research Topics: Develop preliminary research inquiries that can be pursued in subsequent projects.

5. Build Collaborative Relationships: Establish connections with partner agencies, laying the foundation for potential future collaborations.

School Profile and Organisational Structure

The high school hosting the SRIP has the following profile (Table 1) and organisational structure (Figure 2). The school, one of the campuses of a nationwide high school system, is located in a highly urbanized city in a high-income region of the Philippines. SRIP, its internship program, is primarily managed by the Campus-level Internship Coordinator, who directly reports to the Campus Director but is advised by the CID Chief and Assistant CID Chief for Student Affairs. In the school system, SRIP is coordinated by the System-level Internship Coordinator who reports to the System Executive Director. Under the School System Board of Trustees, this hierarchy represents significant roles in internship program policy formulation, approval, and implementation.

Table 1

Selective STEM High School Profile

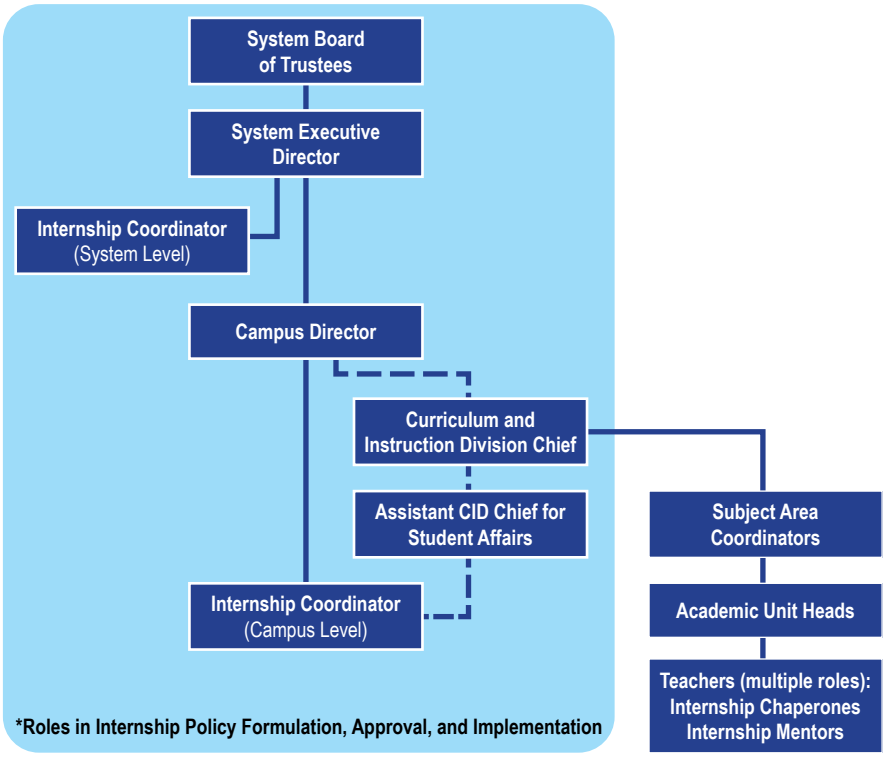
Item	Note	Profile
High School System	Selective STEM high school system	Government-funded selective science high school system under administration of the Department of Science and Technology (DOST) with campuses nationwide, providing STEM education for students with high aptitude in science and math
Region	High growth and high-income region	One of the 17 regions of the Philippines, composed of 6 provinces across multiple islands
City	Highly urbanized city	Administrative capital of the region, houses the high school campus
High School Campus	Selective STEM high school	Cater to students in the region assessed to have high aptitude in science and math Junior High school levels (Grade 7-10) Senior high school levels (Grade 11-12) ~90-120 students per year level for a total of ~630-720 students
Internship Program	STEM & Research Immersion Program[a]	Annual cycle internship program, required course, taken once between Grade 9-12

[a] Pseudonym is used.

Findings developed from the content analysis of the policy documents and semi-structured interviews were organized according to the major research questions: 1) program policies, and 2) policy transitions during the pandemic.

Figure 2

School Organizational Chart featuring SRIP Policymakers and Implementers



Program Policies Content Analysis

The policy content analysis was performed as recommended by Assarroudi et al. (2018). The main content categories were based on the educational policy content analysis tool provided by Cardno (2018). A researcher's approach was employed which involved assembling several policies and scrutinizing them using three perspectives:

1. *Policy Purpose.* The internship Quality Management Systems (QMS) manual aims to ensure the successful implementation of SRIP and serves as the primary guide in program implementation. It has been in effect before and within the duration of this study from 2019 to 2022. Periodically and as deemed necessary, resolutions from the Board of Trustees (BOT) and memoranda from the System Executive Director alter or specify implementation modes. In the campus level, policy reiterations and specific guidelines are drafted by the SRIP Coordinator and reviewed by the Campus Management Committee before approval by the Campus Director. All these policies align with the school system's: 1) vision to prepare students to become globally competitive scientists, 2) mission to advance high school STEM education, 3) core values of Integrity, Excellence, and Service to Nation, and 4)

strategic goals anchored in its FORWARD framework (Future-proof education, Optimum human resource development, Reengineering administrative processes, World-class outputs, Accessible intellectual property, Recognizable brand of STEM education, and Deepening socio-emotional skills).

2. *Policy Construction.* The QMS manual includes the following major components: objectives, scope, policies, procedures, forms, and reports. Interviewees have narrated that the manual has been developed and reviewed by a team of internship coordinators and school leaders before its system-wide implementation. The retrieved document also reflects that it has undergone revisions since its initial release. The manual also prescribes a feedback process where students and partner agencies may suggest for program improvement through the SRIP coordinator. Additionally, students may provide feedback to the partner agency through the SRIP coordinator. Memoranda from the System Executive Director are drafted in consultation with the System Executive Committee. These serve as supplemental guidelines which do not contradict the BOT-approved QMS manual. When the policy change involves a contradiction with the manual, the policy proposal is drafted by the System Executive Committee and submitted to the Board of Trustees for their review, approval, and issuance.

3. *Implementation and Impact.* The strengths, weaknesses, and impact of the policies in practice are discussed using the five model policy components identified by Zinth (2018):

    a. *System and Campus Coordination*. The SRIP policies exhibit several strengths that contribute to the program's clarity and effectiveness. Firstly, the consistent use of the term "immersion" in the QMS manuals and policy documents ensures a shared understanding of the program's nature among all campuses and partner agencies. This uniform terminology promotes cohesion and alignment across the system. Secondly, the incorporation of a strategic plan, notably the FORWARD Framework, provides a comprehensive guide to advance the objectives of the school system and its various programs, including SRIP. This strategic approach is pivotal for ensuring the program's long-term sustainability and maintaining alignment across different levels within the system.

    Additionally, the SRIP policies encompass provisions for internships at various levels, overseen by campus SRIP coordinators, and, in some cases, a system-level coordinator for coordination among nationally recognized agencies. This streamlined coordination eliminates the need for intermediaries, enhancing efficiency, particularly in regions with fewer schools. Furthermore, the collaborative nature of the program offers partner agencies opportunities to engage with students, contribute to their professional development, and

identify potential talent, despite the policy's focus on enumerating roles rather than explicitly detailing partner agency benefits.

However, there are areas where the SRIP policies could benefit from further refinement. Zinth (2018) emphasizes that key logistical information such as intern compensation, wage laws, insurance, and liability are crucial for employer support. Several US states, including Tennessee, Iowa, Nebraska, and Kentucky, are integrating such details into their internship implementation guides. Notably, SRIP policies lack explicit mention of Philippine laws concerning such logistical aspects. Instead, the SRIP policies rely on mechanisms like liability agreements and MOAs which could be further aligned with local regulations to ensure compliance. Additionally, while partner agency roles are well-defined, the policies do not explicitly outline the benefits that partner agencies can derive from their participation. Strengthening this aspect by highlighting the advantages and clarifying roles and responsibilities could enhance the program's comprehensiveness and attractiveness to potential partners.

b. *Access.* The Student Research Internship Program (SRIP) facilitates career counseling both before and during internships, providing invaluable guidance for students and parents. It serves as a comprehensive culmination of students' career exploration journey, starting with early exposure to science subjects as early as Grade 7. However, the policy could benefit to recognize the need for qualified career professionals in assisting students with agency selection, thereby enhancing the program's comprehensive career guidance.

Drawing from Zinth's (2018) insights, the SRIP demonstrates strength in notifying all students and parents about the internship program, effectively promoting participation, especially among underprivileged youth. The annual program orientation conducted by campus coordinators, with mandatory attendance for students and parents, is a cost-effective approach that ensures widespread awareness and engagement.

Furthermore, Zinth (2018) highlights the importance of school and government support in coordinating various stakeholders' efforts at the local level. The SRIP could further leverage this concept by coordinating with schools in the locality to form a support team of teachers and internship coordinators. This collaborative approach would facilitate seamless program implementation across multiple schools within the locality, enhancing its overall effectiveness.

c. *Finance*. Zinth (2018) suggests that school internships should secure dedicated funding from government appropriations to avoid being perceived as unfunded

mandates. SRIP policies indicate that students receive stipend and living allowance equivalent to one month upon completing SRIP requirements. However, during the internship itself, parents cover their children's personal expenses, including food, transportation, field trips, and materials. Based on the policy documents, SRIP seems to be viewed as valuable student learning experience that merits stipend and living allowances as students rather than work exposure that merits wages.

Interviews confirmed that certain partner agencies require minimal material and professional fees. The QMS manual specifies that the school system may cover the required fees for system-level partner agencies only, leading some students to personally cover these expenses. In exceptional cases, the campus has funding assistance to underprivileged and deserving students. Additionally, the policies suggest that the school covers the expenses of teacher chaperones and SRIP coordinators for travel and materials. Aligned with Zinth's (2018) recommendations, we infer that funding provisions for such operational expenditures would enhance the program's effectiveness.

d. *Program Quality.* The SRIP policy exhibits several strengths that contribute to its effectiveness and implementation. Firstly, policy inherently incorporates elements that enable students to achieve program goals as well as learn employability standards and soft skills within workplace settings, enhancing their overall readiness for future careers.

Furthermore, interviews reveal that various training activities are conducted for teachers and coordinators at different stages of their involvement. This comprehensive approach to training fosters a sense of community among educators, promoting knowledge sharing and collaboration, which is essential for the program's success. Additionally, the regular consolidation of annual reports of accomplishments across campuses, highlighting completion rates and partnerships, reflects a commitment to transparency and accountability in program management.

Moreover, the SRIP policy encourages feedback mechanisms at multiple levels, providing valuable insights for program improvement. Students are required to submit internship evaluations, allowing them to express their experiences and suggestions. Similarly, agency mentors assess student performance and provide feedback on the program. Teacher chaperones contribute to the process by offering reports that narrate their own program experiences. Campus coordinators play a vital role in this feedback loop by documenting their insights in annual accomplishment reports, which are then submitted to the system.

However, there are areas where the policy could be enhanced. It currently lacks specific details on how the overarching strategic plan translates into concrete program-specific actions. More explicit and detailed cascading of system strategic plans and program actions would potentially be beneficial. Additionally, while the policy indirectly supports teacher training and capacity-building, formalizing and expanding these efforts could further strengthen the program's educational impact.

e. *Graduation Credit.* Approved work-based learning programs like the SRIP should offer academic credit, either independently or as applicable towards relevant subject areas. While the SRIP serves as a graduation requirement, it currently places no weight on students' performance levels when fulfilling this requirement.

Policy Transitions during Pandemic

The transition and adaptation of the Student Research Internship Program (SRIP) in response to the COVID-19 pandemic and changing health conditions can be divided into several key phases.

Phase 1: Quality Management Systems Manual and Pandemic Response (2020). In the initial phase, the SRIP was governed by the Quality Management Systems (QMS) Manual, which provided a comprehensive framework for the program's implementation. The manual's effectiveness in ensuring the successful execution of the SRIP was acknowledged by the school leaders and community. However, the emergence of the global pandemic led to the suspension of in-person classes and a need for policy adjustments.

The School System Plan for Continuity of Operations was introduced in response to the pandemic. This policy introduced flexible online and offline learning modes, temporarily halted co-curricular activities, and postponed the internship program. This decision posed a unique situation for Grade 11 students who were originally scheduled to participate in the SRIP in 2020, as their internship was deferred. Grade 12 students were not affected as they had already completed their internships in previous years.

Phase 2: SRIP Catch-Up Plan (2021). In 2021, the Campus Management Committee approved a campus-level policy known as the "SRIP Catch-Up Plan" to address the situation of the Grade 12 students who had missed their SRIP opportunity in 2020. This intervention program introduced several key modifications to the standard SRIP:

a. *School-Year Completion*: Unlike the regular SRIP, the SRIP Catch-Up Plan allowed students to complete their internships within the regular school year, on weekends or outside regular school hours.

b. *Campus-Based Internship*: It introduced the option of a campus-based internship, with teachers assuming the role of agency mentors.

c. *Flexible Mode of Learning*: The program adopted a flexible learning approach, accommodating both distance and online learning modalities, allowing students to attend lectures online, execute tasks online or offline, and submit digital reports.

These adjustments aimed to provide a feasible alternative for the Grade 12 students to fulfill their internship requirements while considering the unique circumstances brought about by the pandemic and their initial inability to participate in the SRIP during the 2020 school break.

Phase 3: Resumption of SRIP and Flexible Implementation (Late 2021 - 2022). In the latter part of 2021, the SRIP was reinstated following a memorandum issued by the System Executive Director. This memorandum instructed campuses to adapt their internship implementations based on local health conditions, available resources, and campus capacity. The revised guidelines retained certain fundamental principles of the SRIP, including a minimum of 80 hours of total work time, options for campus-based and inter-campus activities, alternative skills development options, the approval process for internship curriculum, and documentary requirements for students.

In response to this directive, campus coordinators proposed specific guidelines for the "Remote SRIP 2021." These guidelines emphasized the participation of Grade 11 students and temporarily excluded Grade 9 students due to mobility restrictions imposed by the pandemic. The program primarily engaged teachers within the school's STEM faculty units to serve as internal agency mentors, eliminating the need for teacher chaperones and ensuring efficient reporting of student concerns to the campus coordinator.

Phase 4: Guidelines for In-Person Classes and SRIP (2022). In 2022, the Board of Trustees approved the "Guidelines on In-Person Classes in the System Under Different Health Alert Levels." These guidelines provided a comprehensive plan of action aligned with various health scenarios defined by the national government's Inter-Agency Task Force for the Management of Emerging Infectious Diseases.

The guidelines specifically outlined the implementation of the SRIP under different health alert levels, ranging from full implementation (Levels 0-1), limited implementation (Level 2), to suspension (Levels 3-4), depending on the prevailing health conditions. This framework allowed for a flexible and responsive approach to ensure the safety and well-being of all stakeholders involved in the SRIP during times of fluctuating health conditions. By the end of 2022, a subsequent Board of Trustees resolution modified the guidelines, prescribing full implementation of SRIP under Alert Levels 0 to 2.

In summary, the Student Research Internship Program (SRIP) displayed remarkable adaptability during the COVID-19 pandemic, aligning with global trends in education (Campari et al., 2021; Khalil et al., 2021; Lockee, 2021; Zhao & Watterston, 2021). Adaptations like the SRIP Catch-Up Plan, flexible implementation modes, and guidelines for in-person classes at different health alert levels ensured program continuity while prioritizing student and stakeholder well-being. The study highlights SRIP's unique multi-level policy scheme, where system-level policies remained effective through campus-level iterations and innovations. This challenges the notion that structural policy reforms (Zancajo et al., 2022) require national-level revisions. Despite conflicting literature on internship experiences (Snodgrass Rangel & Butcher, 2023), this study documents effective policy responses which resulted to successful student accommodation and program completion. Finally, these findings highlight the pivotal roles of leaders in maintaining a dynamic and responsive program. SRIP's ability to swiftly respond and innovate can be attributed to the collaborative and mutually supportive policymaking roles within the program, enabling its resilience in the face of adversity.

Conclusion and Recommendations

In conclusion, an examination of policy documents and policy transitions of the SRIP program reveals a dynamic and adaptable approach to STEM education. The program policies, outlined in the Internship Quality Management Systems (QMS) manual, demonstrate a commitment to aligning with the school system's vision and mission while prioritizing continuous improvement through regular revisions and feedback mechanisms. However, opportunities for enhancement exist, particularly in aligning policies with local laws, clarifying partner agency benefits, involving career professionals, and strengthening the program's connection to the strategic plan.

Policy transitions, exemplified by the program's response to the COVID-19 pandemic, highlight its adaptability and resilience. Initiatives such as the SRIP Catch-Up Plan, flexible implementation modes, and health-alert-level-specific guidelines for in-person classes demonstrate the program's commitment to continuity and student well-being in challenging circumstances. Applying Cardno's (2018) policy analysis tool, the SRIP Policy strengths lie in its *purpose, construction,* and *coordination in the system and campus levels*, enabling multi-level policymakers and implementers to adapt and innovate within the existing QMS guidelines. Clear program goals and adaptable guidelines ensured the SRIP program success amid crisis. For the post-pandemic scenario, the QMS manual is deemed to be consistently beneficial for system-wide implementation, but may benefit from incorporating sections to guide flexible modes and campus-based internships.

In summary, the SRIP program's policy features and policy transitions collectively contribute to its effectiveness and responsiveness in providing valuable STEM experiences

to students. By addressing areas for improvement and maintaining a collaborative policy development approach, the SRIP can continue to evolve and prepare students for successful careers in STEM fields. In preparing for the post-pandemic landscape, the SRIP program's system-level policies demonstrate inclusivity and flexibility, yet they could optimize their effectiveness by formally incorporating and documenting campus-specific innovations. This approach would facilitate the dissemination of best practices across all campuses, ensuring shared benefits and continuous improvement.

Further research is recommended to explore leadership roles in policy formulation, assess the uniqueness of STEM internships, and investigate crisis-resilient education policies. Replicating this study in varied educational contexts may reveal context-specific best practices to benefit educators, students, and internship partners. In preparation for a post-pandemic resilient program, it is further recommended to maintain national-level policies that prioritize program objectives and flexibility, while also documenting and integrating campus-level policy innovations into broader for broader implementation. This approach ensures adaptability to local contexts while maintaining alignment with overarching program goals.

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