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Dream the Same Dream: Design of Sustainable Value Chain Model in Education Industry Based on HMEAYC

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Abstract: The education industry is facing increasing pressure to enhance value for its stakeholders, including students, parents, educators, and society. To create more value, the traditional value chain needs to be restructured to be a new value chain that incorporates new activities and technologies. Based on Michael Porter's original theory of the value chain model, a sustainable value chain model for education businesses is proposed in this study based on the Holistic Music Educational Approach for Young Children (HMEAYC) to overcome the boundaries of traditional education organizations and add the value of education businesses in every sector of the education industry for stakeholders of education from academic scholars to children. The developed technology including artificial intelligence contributes considerably to the sustainable value chain, transforming the education industry and enabling personalized, high-quality education services.

Keywords: Sustainable value chain, HMEAYC, Value-added stream, AI, Personalized education

1. Introduction

As people pass by beautifully decorated display windows, they are often drawn to the products showcased within, driven not only by their practical needs but also by the visual presentation of their aspirations for the future. Taking IKEA's successful value chain management as an example, Normann and Ramirez (1993) pointed out that IKEA does not simply "consume" but rather "creates" values. IKEA, a furniture giant not only manufactures furniture but improves home style with customers. By visualizing customers' dreams for a better living environment and sharing the growth of its value, IKEA demonstrates that value chain management is not limited to supporting activities primarily within the organization but involves strategic efforts to increase its value outside. Effective marketing management requires simultaneous planning and integration of transaction activities between organizations to successfully integrate and coordinate external resources and internal operations (Tsai & Hu, 2005). When businesses make the dreams of customers come true, how the education business does the same for teachers, children, and parents to increase the value is an important topic to research.

The education business plays a vital role in shaping the future of individuals and society at large. However, the education business is facing increasing pressure to enhance its value for stakeholders, including students, parents, educators, and society. Therefore, it is necessary to restructure the traditional value chain of the education business and create a sustainable value chain that incorporates new technologies and activities. Based on Michael Porter's original theory of value chain management (Porter, 1985), this study is carried out to propose a new value chain for the education business and overcome the limitations of traditional education organizations. As a result, a way to increase the value in every sector of the education process for the stakeholders can be found.

The Holistic Music Educational Approach for Young Children (HMEAYC) has been researched on theoretical and practical applications for decades by the Chaoyang University of Technology under the project of the Holistic Music Educational Approach for Young Children since 2014 (Lee, 2014). HMEAYC has proven to have a solid theoretical foundation and has been effective in practice (Ho, 2020 & Liang, 2017). With curriculum development and teacher training for decades, HMEAYC has now attained a core value in the education business. However, the implementation of HMEAYC is still in the stage of curriculum development and teacher training, its core value has not been extended beyond the boundaries of the business. However, if the goal of HMEAYC is to provide a proven teaching approach to help children and families in need, more teachers, children, and parents have to cooperate to achieve the goal together. Thus, in this study, Porter's value chain model is reconstructed to extend the value chain of HMEAYC to on-site teaching. The result is used to feedback on teaching achievements and propose a sustainable value chain model that serves as the foundation for strategic thinking in the development of HMEAYC.

2. Materials and Methods

The original theory of value chain management by Porter was introduced in his book “Competitive Advantage: Creating and Sustaining Superior Performance” in 1985. It describes the various activities that organizations perform to create value for their customers. Porter’s value chain theory identifies two categories of activities: primary activities directly involved in the creation and delivery of a product or service and activities to support the primary activities.

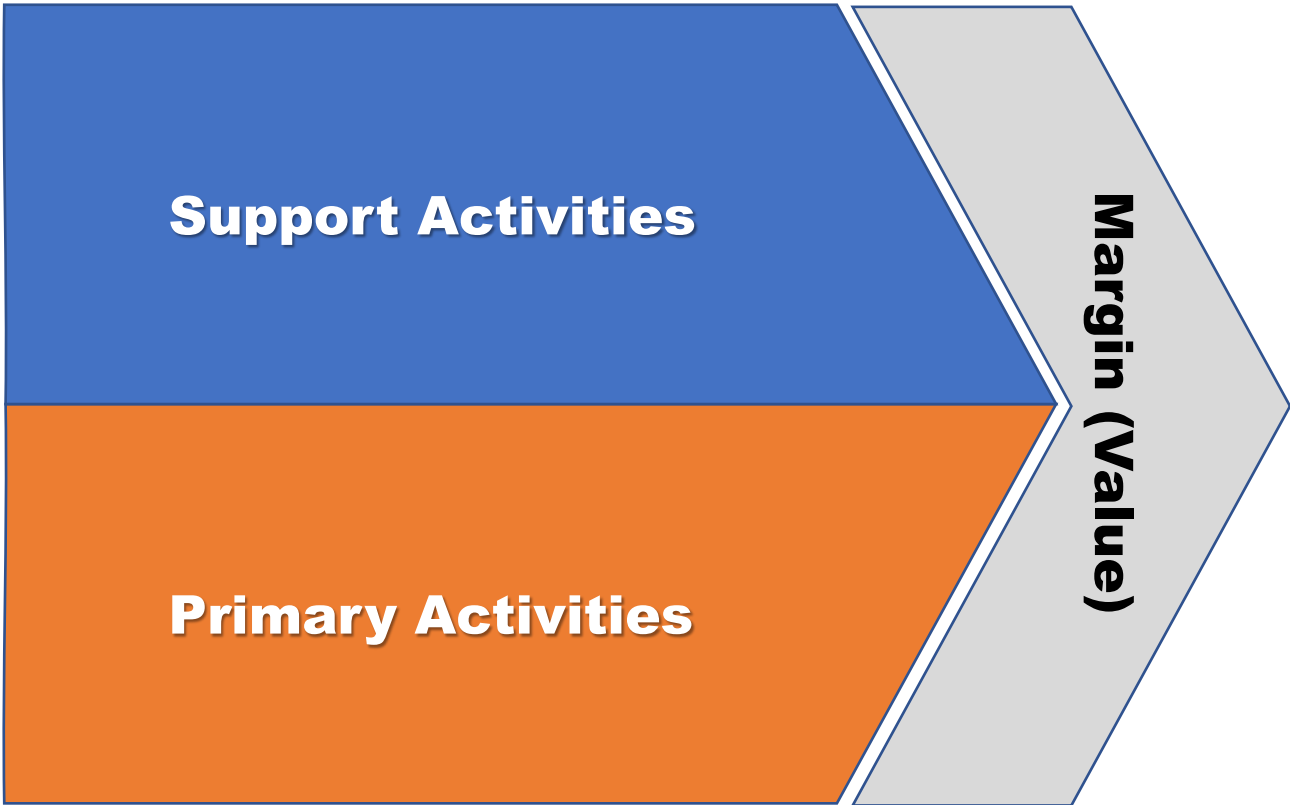


Fig. 1. Porter’s Value Chain Model redrawn in this study

The education business has unique features that require a new value chain design. The sustainable value chain for the education industry aims to overcome the boundaries of traditional education organizations and increase the value of the education process. This new value chain incorporates activities that have been previously outside the scope of traditional education organizations such as education technology companies, assessment providers, and other service providers. The new value chain requires new technologies including artificial intelligence (AI) to transform and enable the education industry to provide personalized, high-quality education services.

HMEAYC focuses on children's overall development through music education comprehensively, providing children with a well-rounded education that includes the technical aspects of music as well as its social, emotional, cognitive, and physical dimensions. The HMEAYC approach is rooted in the concept of holistic education and integrates all aspects of a child's development as a whole. Related research demonstrates that music education has positive effects on children's cognitive, linguistic, social, and emotional development (Schellenberg, 2011). Koutsoupidou and Hargreaves found that music education promoted creativity, self-expression, and self-esteem. HMEAYC can be implemented in schools, community centers, and private music studios with the potential to provide young children with a fulfilling educational experience that fosters their development.

The proposed sustainable value chain for the education business is based on a thorough review of existing literature and research on value chain management and the value stream of the education business. The sustainable value chain is designed to be flexible and adaptable to different education organizations in diverse contexts. The implementation of the sustainable value chain requires the adoption of new technologies and the collaboration of stakeholders including educators, education technology companies, assessment providers, and other service providers.



Fig. 2. Sustainable value Chain model in which the value stream is spirally enhanced by the value-added primary activities in each sector and the support activities are centered to provide support for each sector.

In today's fast-changing business environment, boundaries between businesses are no longer just physical. With developed digital technology that delivers various services and information, businesses require a strategic approach to their value chain to overcome the boundaries that may hinder growth and success. One way to achieve this is to identify the primary internal or external activity of the organization to create the value chain in each sector of business. According to a study by Linder and Cantrell (2000), this helps businesses identify the sources of value creation and determine how to allocate resources to maximize value. By focusing on the activities that are most critical to the value chain, businesses can enhance the overall value they deliver to customers.

Managers must also consider the content and methods of support activities to enhance the overall value of the business. The method involves collaborating with external partners to provide complementary services or leveraging digital technology to deliver information and services to customers. According to Wagner and Weitzl (2016), digital technology helps businesses overcome boundaries and enhance the overall value they deliver to customers, which increases customer satisfaction, loyalty, and ultimately, profitability. However, businesses need to take a long-term perspective when it comes to value chain management. Focusing on profit margins for short-term gains is not a sustainable approach to building a successful business. Instead, businesses must focus on delivering value to customers, building stronger relationships, and creating a competitive advantage. One example of a company that has successfully overcome boundaries in its value chain is IKEA. Through its innovative store displays and delivery services, IKEA has eliminated the boundary of value and transformed the furniture industry. According to Marimon et al. (2016), IKEA's customer-centric approach has led to increased customer loyalty, higher profits, and a strong brand reputation.

3. Results

The first sector in the value chain of the education industry is academic research. This involves researching and developing theories that can be applied in the classroom to improve the learning outcomes of students. Educational theories are based on a wide range of factors, including cognitive psychology, pedagogy, and social and cultural contexts. The second sector of the value chain is curriculum design which involves developing a set of learning objectives and designing instructional materials that align with those objectives. Curriculum design is in a critical stage of the education value chain because it sets the foundation for what and how it will be taught. According to Black and Wiliam (1998), curriculum design plays a significant role in student achievement because it influences how well students understand and retain information. They found that well-designed curriculums lead to higher levels of student achievement. The third sector of the value chain is teacher training and development. Teachers are essential in the education value chain as they are responsible for delivering the curriculum to students. Therefore, the training and development of teachers are crucial for ensuring that they have the necessary skills and knowledge to deliver effective instruction. Darling-Hammond (2006) found that teacher training and development are critical components of effective education systems. The

importance of ongoing professional development opportunities for teachers is emphasized to enhance their instructional practices. The fourth sector of the value chain is classroom instruction. In this sector, teachers deliver instructions to students using the curriculum and instructional materials developed in the previous stages. Effective classroom instruction is critical for student learning and achievement. Effective classroom instruction has a significant impact on student achievement. Hattie (2009) found that factors such as teacher clarity, feedback, and instructional quality had a strong positive correlation with student achievement.

In the sustainable value chain for the education business, the fifth sector is achievement observation, which involves monitoring and assessing student progress toward learning objectives. This sector, with the extended primary activities of feedback, improvement, and continuous innovation, is critical for providing feedback to teachers, parents outside of the business, and researchers within the business to adjust and improve the teaching approach. Technology can play a significant role in this stage by providing real-time data on student progress and performance. The use of artificial intelligence-based systems can improve the accuracy and efficiency of student assessment, providing more targeted feedback to students, parents, and teachers (González-Calatayud, Prendes-Espinosa, & Roig-Vila, 2021). It also helps improve student learning outcomes ultimately leading students to show better academic performance.

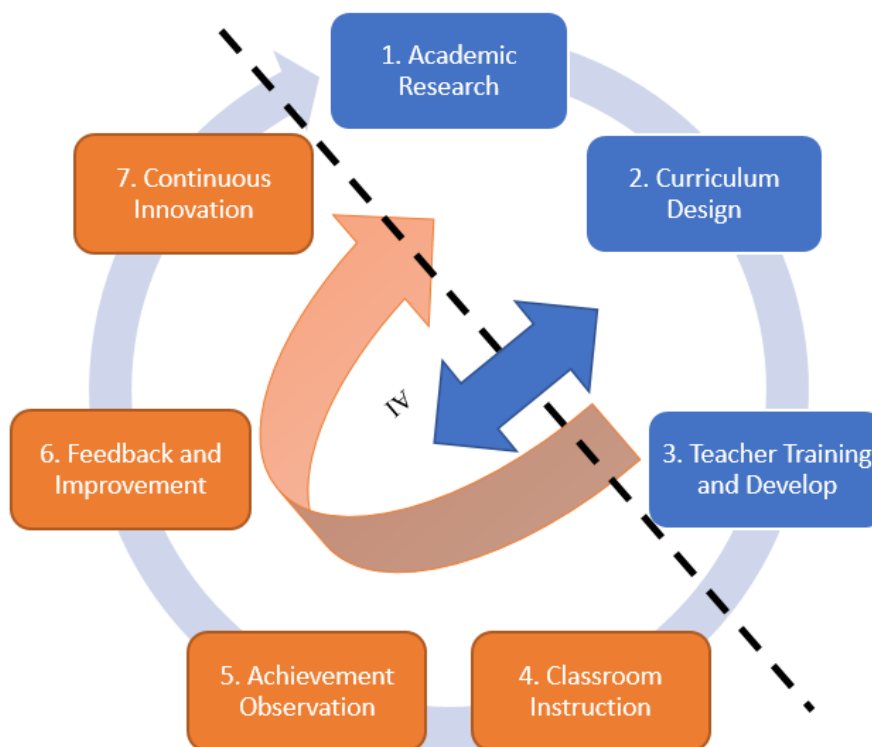


Fig. 3. Process to build the sustainable value chain model by identifying all the primary activity sectors both inside and outside the business, the visible and invisible boundaries of the business, and support activities for both content and method.

A management system is used to evaluate students' achievements constantly by implementing continuous assessment and feedback mechanisms. The assessment and feedback can be performed through the use of formative assessments which are designed to monitor and evaluate student learning throughout instruction. Formative assessments include quizzes, homework assignments, in-class activities, and projects that are designed to assess student understanding of the subject matter. The AI system can be integrated into the management system for classroom teachers to provide better independent observations of students' achievements. As the AI system can use data from formative assessments, student engagement, and other metrics, it insights and feedback to teachers about student performance. It helps teachers identify areas where students are struggling and provide targeted interventions to help them improve. In addition to formative assessments, in the management system, summative assessments are also implemented to evaluate student learning at the end of a course or unit. Summative assessments include final exams, term papers, and other assessments that are designed to measure student achievement against predefined learning objectives.

By implementing a combination of formative and summative assessments along with the AI system to assist observations and feedback, the management system can provide a comprehensive evaluation of student achievements and help teachers identify areas where students need additional support and understand their strengths and weaknesses to develop strategies and improve their

performance. Ultimately, the system allows a more effective education system to improve student outcomes.

4. Conclusions—The Time When We Dream

The sustainable value chain approach to education management is proposed in this study to cross the boundaries between different sectors in the education business and create a more integrated and effective value-added stream. By doing so, organizations can create or even maximize their values for stakeholders. The education business faces significant challenges in the 21st century, including the need to prepare students for a rapidly changing and complex society. Therefore, adopting a value chain approach is necessary to help education organizations better align their efforts with the needs of students and society.

One significant advantage of the sustainable value chain approach to education management is that it provides a framework for continuous improvement. By analyzing and optimizing each stage of the value chain, organizations can identify areas for improvement and make necessary changes to enhance student learning and achievement. The use of technology, such as artificial intelligence-based systems, can provide real-time data and insights that can inform decision-making and improve the efficiency of the value chain.

However, there are also challenges associated with implementing the sustainable value chain framework into education management. For example, the education business is often fragmented and complex with multiple stakeholders and their conflicts of interest. Therefore, it is challenging to align efforts and create a shared vision for education management. Furthermore, the adoption of technology in education is not achieved without its challenges including concerns about data privacy and security.

Overall, the sustainable value chain based on HMEAYC represents a significant opportunity for the education business to increase value in every sector within the value chain. By breaking down the boundaries between different sectors in the HMEAYC business and adopting a more integrated approach, the organizational value will increase and even be maximized. The use of technology, such as artificial intelligence-based systems, significantly enhances the effectiveness and efficiency of the value chain. However, introducing the sustainable value chain approach to education management faces challenges such as the fragmentation and complexity of the education industry and concerns around the adoption of technology. By addressing these challenges, education organizations using HMEAYC can unlock the full potential of value by dreaming the same dream of everyone who pursues a better education environment.

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