ORGANIZATIONAL AND ENVIRONMENTAL CHANGES: A BASIS FOR CURRICULUM REDESIGN

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ABSTRACT

The education sector during the current pandemic has been greatly affected by the learning environment, management and administrative practices, and pedagogical aspects. Many schools around the world have made adjustments in their respective curricula to focus on what is essential during these trying times. The concept of school curriculum has been challenged to become more responsive to this large-scale universal undertaking. This paper explores curriculum development through the lens of the stimuli-response loop to show its dynamism. Furthermore, the researcher cites important cyclical models to picture how a curriculum develops and changes and integrates innovations during an organizational change. Finally, the researcher stitches the concepts of curriculum and organizational change through systems archetype in an attempt to suggest a model that would cater to such large-scale environmental movements like the current pandemic.

KEYWORDS: *Environmental Challenges, Responsive Curriculum, School Curriculum, School Organization, Systems Archetype*

INTRODUCTION

The Covid-19 pandemic has brought devastating effects in many fields and aspects of life. Such effects cascaded and have ultimately penetrated our everyday lives, termed as the "New Normal". These effects have questioned many existing efforts toward modern-day development and challenged the pre-existing views of life. It is universally known that education characterizes what a society would look like, hence, we must take into account the processes and systems involved, as well as the related societal aspects in education and the environmental changes during the pandemic that have partially sealed off the educational sector either directly or indirectly.

The situation necessitates a change in education. This has been observed throughout the world and has ultimately impacted the environmental and organizational aspects of schools. Governments and policymakers have ordered strict protocols including school temporary closure and astringent home quarantines (Petretto, Masala & Masala, 2020). This is in turn characteristically changed the dynamics of school activities, the most pronounced one is the shift from face-to-face instruction to online classes (Li & Lalani, 2020).

Glaringly, such a dramatic shift involved every element of schools: what, who, when, where, why, and how. In other words, the viewed changes comprise and challenge the goals of the school, stakeholders, teaching-learning environment, curriculum, pedagogy, assessment, and evaluation (Zhao & Watterston, 2021). Conjointly, highlighting the very soul of schools, the curriculum has also been changed (Pock et al., 2021; Gul & Khilji, 2021). This has brought an important

inquiry to the researchers: how have schools replanned and redesigned the school curriculum in the New Normal? Although there exist several models for curriculum development (Adirika & Okolie, 2017), it seems that a model that represents curriculum replanning, redesigning, and re-development involving environmental challenges and organizational change is still not evident. This paper connects the curriculum development process, organizational change, and environmental challenges by drafting a redesign and replanning model that may aid schools in adapting curriculum change during unpredictable times of crisis.

LITERATURE REVIEWS
The Dynamism of Curriculum: The Needs for Curricular Changes

Khan et al. (2019) stated that curriculum evolves. Gibs (2018) likened this curriculum development to a metamorphic stage of a butterfly— a chrysalis. It was mentioned in the paper that curriculum development was a slow and arduous change, often reflected in the barriers and challenges that education faces (Pak et al., 2020; Trudi, 2017). However, Gibs (2018) argued that even if the change is slow, progress is still present.

Using this as an impetus, the curriculum can be said to be alive (Khan et al., 2019; Alsubaie, 2016), existing and behaving like an organism. In biology, organisms have certain characteristics. One of which is sensitivity; being able to respond to a stimulus and act on it to produce valid changes that cater to its living cells (the stakeholders) for the most viable homeostatic range (organizational stability). Furthermore, microscopically, the trillions of cells forming specialized tissues and organ systems (units and departments of the organization), are also the ones producing minimal changes, but when massed together, create a visible transformation for the whole organism.

The dynamism of curriculum accounts for its environment and how the units of organization work interdependently to provide a characterized response to these changes. The role of school stakeholders and the school itself is needed to address changes in the curriculum. Supe (2016) stated the importance of proper management of curriculum change, innovation, and networking. Alsubaie (2016) concluded that school plays an important role in the adaptation, change, and development of curriculum through continuous development. Khan et al. (2019) stated that schools must provide a checklist to observe attainment of school quality standards. This checklist comes in the form of mission, vision, goals, objectives, and school philosophy; the variety of educational programs; and governance and administrative activities. It highlights the role of schools in honing and designing the curriculum.

The environment is one of the stimuli for the school curriculum to move toward and gear for changes. Large-scale stimuli and changes are observed in line with this. Supe (2016) mentioned that technological innovations have brought changes to the curriculum. Schwab (2016) viewed these technological innovations as a challenge and opportunity and these need to be enacted along with policies. The technological revolution has overtaken the decade with the precedence of cybernetics, computers, and the internet. It caused an obvious integration of technology and curriculum as well as teaching-learning engagement through incorporating equipment and devices for educational purposes (Abdullah, 2016).

OECD (2018) accounted for the impacts of environmental and natural challenges and depletion of natural resources on education. Environmental challenges include earthquakes, volcanic eruptions, typhoons or tropical storms, drought, and related meteorological and climatic changes (Ireland, 2016). Ireland (2016) described the devastating effects of such disasters on different countries. For example, it was revealed in the report that, due to many disasters hitting Indonesia, the Philippines, and Vanuatu, education is severely disrupted. These archipelagic countries situated in the Pacific Ocean always face typhoons and typhoon-related disasters such as flooding and landslides. Schools were used as evacuation centers to cater to the survivors and schools were closed from 7-30 days (based on the ranges provided in the report).

Aside from technological and meteorological movements in the environment, several papers revealed how war, tension, and armed conflicts may affect education (Carr & Mallam, 1943; Diwakar, 2015; Hoenig, 2018). Carr & Mallam (1943) cited the works of Davis in 1942 and stated that wartime changed the temporal flow of activities in participant schools. New courses and research projects were also introduced. Diwakar (2015) verbalized how war has become a normalized phenomenon affecting Iraqi education. Violence caused death and fear, affected the implementation of the curriculum, an actual decline in the enrolment status, and the number of schooling years (Diwakar, 2015). A shift of mentality occurred causing the students' families and teachers to prioritize survival and forget about quality learning. Diwakar (2015) stated that as a supportive curriculum, the decrease in supply factor has also added to the decline in learning. This is due to the reduction of budget, shortage of electricity, and depreciated learning materials.

This roughly gives a view of how the time, spatial, supportive, hidden, and procedural structure of the curriculum is discontinued and it presents an

unclear picture of how the curriculum can help the learning of the remaining students. This also raises the question of how the curriculum is continued despite an obvious pause. Taking into consideration the well-being of the school stakeholders and the extended issues after the disaster, are there any salient improvements, redirection, and replanning of the curriculum to cater to such changes? Ireland (2016) mentioned in her report that there were existing safety frameworks, protocols, and guidelines, however, it seems that a direct representation of curricular replanning is still unclear to alter the curriculum to suit such conditions or situations.

Moreover, this inquiry is strengthened because of the current pandemic: when and where there's a large disruption of the normal academic activities, how is the curriculum replanned? How does the replanning and redesigning take into consideration the respondents of stimuli (school as organization) and the stimuli (changes in the environment) at such a large scale?

Charland et al. (2021) explored in their recent paper how pandemic intricately affects the education sector through the lens of the school curriculum. They discussed how the four dimensions of the curriculum are affected: teachers are affected by lack of training for transitioning and the professional and familial responsibilities; students' achievement may decline and they are tremendously affected in both physical and psychological health; subject matter expectations are reduced and accelerated, establishing key learning priorities as essential and desirable, giving much focus on the former; the milieu is affected by the different strict safety measures and health protocols; parents are also taken into account, their new cooperative roles are needed despite having been poorly equipped.

With such a scale of effect, how does the curriculum respond and act to such fast-changing and unpredictable chaotic situations (Charland et al., 2021)?

MODELS OF CURRICULUM DEVELOPMENT

To further understand the claims of the researchers, selected models representing curriculum developments are presented. The curriculum is a dynamic systematic process involving different people, strategies, procedures, and even tools for development.

This can be viewed as the stimulus-response feedback loop, hence, the two models present a cyclical but continuous nature because a process must not be bypassed otherwise it will cause instability. Newlyn & Blissenden (2011) and Mai (2015) described Print's (1989) continuum of curriculum development model where the cyclical model of Wheeler and Nicholls & Nicholls was explained.

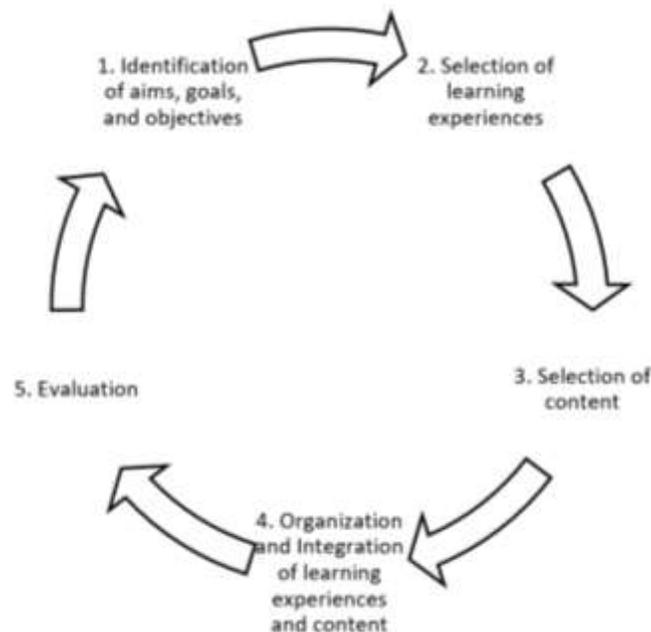*Wheeler's Cyclical Model of Curriculum Development*

Figure 1. Wheeler's Curriculum Model (Drawn after the image from Adirika & Okolie, 2017)

Bhuttah et al. (2019) mentioned that this model best illustrates the flexibility and continuity of curriculum development. The cyclical nature of the model stresses continuous improvement and its dynamism accounts for adoption and adaptation (Adirika & Okolie, 2017; Bhuttah et al., 2019). Continuing with the metaphorical vein, adaptation is a characteristic of a functional organism placed in its environment. This gives a picture of how an organism becomes interdependent and interrelated with its surrounding. Adirika & Okolie (2017) and Bhuttah et al. (2017) described the relationship between the variables in the Wheeler's Model in the same fashion; the degree of interaction is necessary to keep the cycle going.

The approach itself is deductive. It starts with writing the proper objectives and goals that become the key driver in establishing the cycle. The process is followed by selecting learning experiences then selecting learning content. Mai (2015) mentioned that Wheeler clarified the distinction between the learning experience and content, which amended the work of Tyler, the Four Basic Principles of Curriculum Rationale (Bhuttah et al., 2019). These steps are followed by organizing the learning experience and content. Lastly, evaluation takes into account identifying the strengths and weaknesses of each stage to attain the aims and objectives (Adirika & Okolie, 2017).

Nicholls & Nicholls' Cyclical Model of Curriculum Development
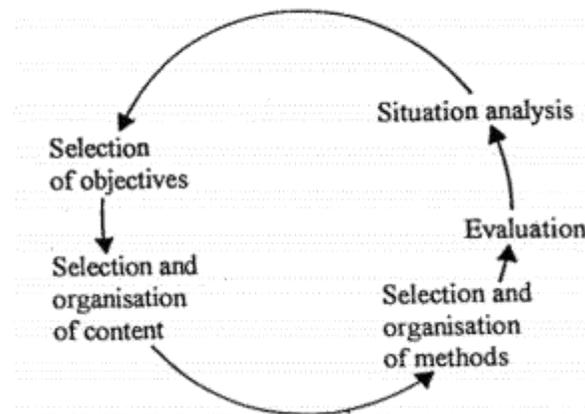

Figure 2. Nicholls and Nicholls' Curriculum Model (from the work of Print, 1989, cited in Tiede, 1995).

Adirika & Okolie (2017) mentioned that this model is guided by the external environment such as the locality where the school is found, hence, objectives formed and developed must picture the local environment where the students belong. This allows a more responsive education that caters to its immediate surroundings. This is best understood as contextualized where the roles for the local and national development are taken into account to view education in a real-life situation.

The model has five phases (Fig. 2) similar to Wheeler's, beginning with the situational analysis (Adirika & Okolie, 2017). This is followed by the selection of learning objectives, which stem from pre-

existing data and information brought about by the initial step. Next is the selection and organization of content, followed by the selection and organization of methods. These steps are inherently different from the stages in Wheeler's Model as selection and organization occur simultaneously and methods are emphasized instead of the learning experience. The last stage is the evaluation (Adirika & Okolie, 2017).

Both models eye the importance of having sound aims and goals, as such, the two models have a prescriptive view of education through learning outcomes and objectives. Further, both underscore the importance of evaluation as a form of feedback for the cycle.

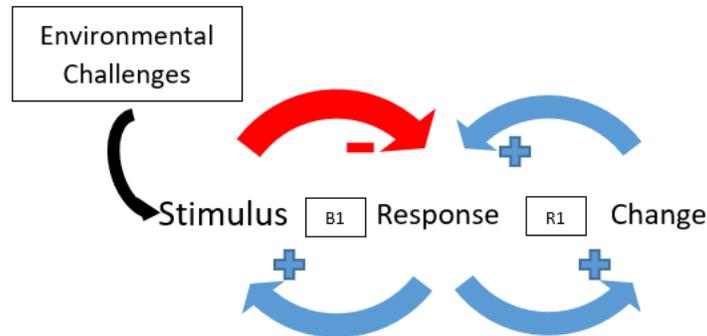## Environmental Changes for Curriculum Redesign: Situational Analysis

Figure 3. Analyzing Stimulus-Response Feedback Loop and Environmental Challenges

As metaphorized, the researchers view curriculum as living dynamics. *Figure 3* shows how the researchers characterize the dynamism of Curriculum Redesign: environmental challenges act as the stimuli in the causal loop, and these bring unwanted and unknown deviances to the homeostatic nature of schools. Such is the case of the current pandemic, the permeation of its effects has not only caused interference with the face-to-face learning and administrative and managerial functions but also to the curricular aspects of the schools. A variety of curricular support forming the learning spaces such as libraries, scientific laboratories, Physical Education gymnasium, and classrooms (support curriculum) have left unused and stagnant, and the intended curriculum (lesson plans, syllabus, and course outcomes) altered, the social system and school culture (hidden curriculum) unexperienced by the students, and others.

The large-scale environmental/external challenges may bring negative continuous stimulation to the system that needs to be responded to immediately, for positive changed to take place. These curricular changes consider the response is reflected as positive feedback to the response, which deals with the stimulus. The loop showcases both a balancing structure (stimulus-response) and a reinforcing loop (response-change). This loop explores the causal relationship between the variables and, for this particular representation, begins with analyzing the situation and the environment. It emphasizes the first part of Nicholls & Nicholls' Cyclical Model.

Detailing the changes in the environment needs to be carefully addressed as it allows the foundation of the curriculum development process. This detailing is seen as the identification of the needs and how they can be used for crafting the curriculum. As the brain of every curriculum development process, the school has the power and responsibility to identify the needs and the situation of the curriculum. In doing so, the situational analysis may be applied (Schneiderhan, Guetterman & Dobson, 2019; Todea & Demarsek, 2017); Todea & Demarcsek (2017) alternately used the need analysis and target situation analysis. Bachri (2018) referred to this as requirement analysis. He wrote that needs analysis targets to profile the needs of the learners, community, and subject field. Hence, situational analysis allows curriculum responders and leaders to factor in potential impacts, both negative and positive risks, into planning and designing the curriculum. Curriculum responders, in this case, are people, who may affect and may be affected by the curriculum, aside from the leaders.

Todea and Demarcsek (2017) explicated that requirement analysis is not a one-time approach but a continuous repeated process. In this representation, the large-scale environmental and external challenges may unknowingly produce an unwanted and unwarranted shift. This characterizes its unpredictability, complexity, and ambiguity, hence, it may produce continuous stimuli and long-lasting changes.

The utilization of requirement analysis acts as a springboard by providing information about this shift and is helpful in the curriculum development process (Todea & Demarsek, 2017). Information may be drawn out from structured, semi-structured, & research techniques and policies (Schneiderhan, Guetterman & Dobson, 2019). Schneiderhan, Guetterman & Dobson (2019) mentioned the importance of composing a rationale statement to strengthen the foundation for the development.

In the case of this paper, needs analysis does not essentially cater to each student's needs but the general whole and the ongoing situation because, as mentioned, large-scale challenges are the stimuli for the change.

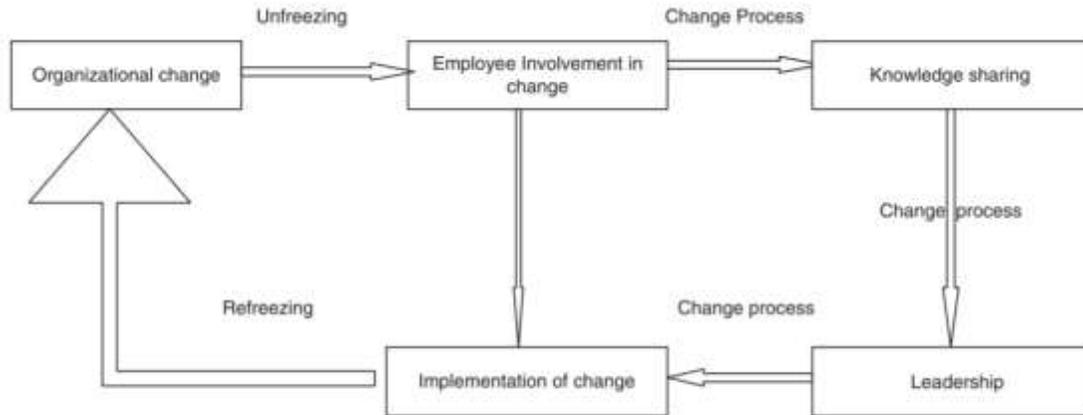## Organizational Changes for Curriculum Redesign: Lewin's 3-Step Change

Figure 4. Lewin's 3 Step Change Model (from the work of Hussain et al., 2018)

The metaphorized loop (Fig. 3) shows that after the response is the directed change. Change is a necessary step in the loop because it is the one that brings adaptations leading to homeostasis. Deborah (2018) mentioned the postulate of Lewin about change, "motivation for change must be generated before change can occur" (p. 3). The researchers apply Lewin's Change Model which explicates important key change stages that an organization undergoes. These phases are vital neural steps in this organismic view of curriculum change, for it is the organization that acts as the brain to produce change.

Hussain et al. (2018) noted that change is a difficult process and this is especially true for an organization with longstanding culture. Burnes (2004) metaphorized the progression of Lewin's change as an ice cube that needs to be liquefied to respond to change by actively shaping it and solidifying the desired shape (cited in Deborah, 2018). This is how the status quo is temporarily disturbed to gain balance and anchorage again to achieve the desired state (Hussain et al., 2018). *Figure 4* establishes that the motivated organizational change begins with the unfreezing stage. Hussain et al. (2018) mentioned that change is stimulated externally and internally hence change must be planned as a "proactive change" rather than a pressured change to seek the active involvement of the stakeholders for a desirable change. Deborah (2018) stated that this enhances the driving force for stakeholders to shift toward change and it needs communication. Deborah (2018) also mentioned that unfreezing stage s the hardest and most stressful phase because not everyone wishes to participate in change.

Next is the actual change stage that involves new data and new reactions (Pawar & Charak, 2017). Hussain et al. (2018) determined the importance of generating new knowledge through the collective effort of the involved stakeholders and this new information have to be shared as a form of "organizational learning" (p.125). Wenger (1999) mentioned that the generation of new knowledge is done either by inviting a third-party or agency intervention or by inviting experts within the organization (cited in Hussain et al., 2018).

Moreover, the generation of new knowledge is managed by leaders, hence leadership is a key factor shown in *Figure 4*. Pawar & Charak (2017) mentioned that support at this stage is critical because change is complicated due to the gradual transition. This support is given by the leaders as "hands-on management" (Deborah, 2018, p.5) through and with preparation, training, and expectations (Pawar & Charak, 2017). Hussain et al. (2018) mentioned leadership defines the kind of stakeholders who will support the change.

The final stage is the actual implementation of change, the refreezing. Pawar & Chakar (2017) stated that this is when the security of the organization is built up again and the new changes become the new standard. Hussain et al. (2018) discussed that the shift is simultaneous and requires activities to support the change. This gives an assumption that the stakeholders need to carefully adapt, include and clarify new processes and integrate them as routine, hence, there's a degree of discontinuity of previous practices. Anchorage and the establishment of the new changes are very critical at this stage. Deborah (2018) wrote that if this phase is improperly done, change will become short-lived, and the previous status quo will reemerge.

A Proposed Model for Replanning and Redesigning a Responsive Curriculum
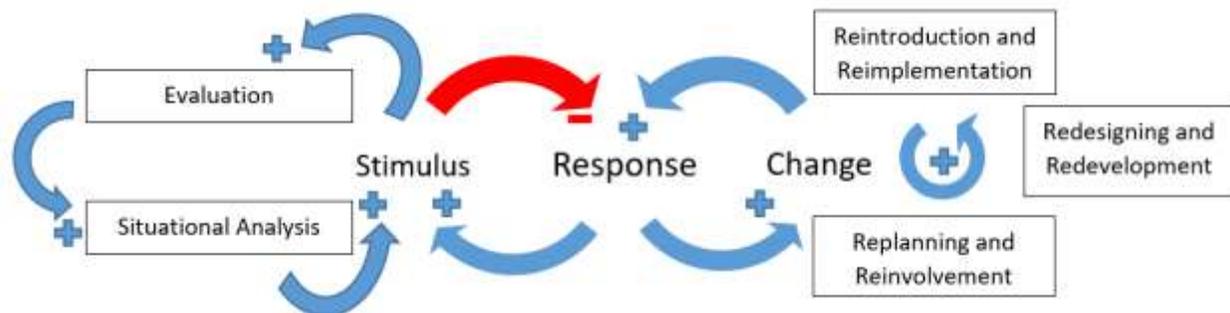

Figure 5. Diagram for Responsive Curriculum Replanning and Redesign

The model (Fig. 5) depicts the relationship between stimulus, response, and change. This representation relies on the environmental challenges and organizational movement to target risks, threats, and uncertainties, hence, it targets complex learning situations such as education during war, technological revolutions, calamities, and even the pandemic.

To understand the model in the essence of curriculum development, the researchers lay down these premises:

1. Curriculum change must be a planned change.
2. School as an organization is the brain for the change.
3. Environmental needs and challenges are stimulants for curricular change.
4. Curriculum change is a response to the needs and challenges of a school.
5. School stakeholders are the curriculum responders.
6. Evaluation is vital for continuity.

The researchers argue that schools are stimulated by both internal and external challenges, however, cases like the current pandemic, demand a drastic curriculum behavioral change to counter it. As such, the change involves almost all the stakeholders and curriculum change at this level is a form of organizational change. Arising issues and problems identified through the situational/needs analysis will add to the prior stimuli creating an overlap. In this stage, the identification of key strengths, weaknesses, opportunities, and threats is vital. Following this is the response stage, where the initially identified issues are processed, what areas of the curriculum do the issues target? How is it affected? What are the implications? Is the organization ready to take on such challenges? Is the school ready for a planned curriculum change? This phase is the readying stage of the organization and is the springboard for future change.

Following the cyclical steps of curriculum development, the researchers integrate Lewin's 3 Steps Change. The model surmises the initial stage (unfreeze phase) as the replanning and reinvolvement stage where the data collected from the needs analysis and response processing are utilized to draft and replan a curriculum. Curriculum leaders and curriculum responders are called forth to drive the change. This is followed by the redesigning and redevelopment stage (change phase) where the past curriculum will be readjusted and patterned based on the needs analysis. Efforts of curriculum leaders are expected because they will become the link for the stakeholders. Their expertise, experience, and wisdom are needed for curriculum structuring. The flow of communication should be observed, people empowerment is emphasized, and knowledge management is needed.

Lastly, the phase of reintroduction and reimplementation called the refreezing stage entails the consolidation of the readjusted and redesigned curriculum and sharing of information to the curriculum responders. This level observes an active phase of reinforcing the desired curricular change and slowly integrating the change at the classroom level whether virtual or actual. The curriculum change is feedbacked as a response to the stimuli, where there is an organizational practice of the change and continuous adjustment. Finally, to solidify the change and continuously improve, evaluation is implemented.

CONCLUSION AND FUTURE DIRECTIONS

This paper attempted to conceptualize a new model for responsive curriculum development. Through the lens of biological dynamism and organizational change, the study established the link between curriculum development and large-scale challenges. The emergence of the pandemic is an

example of the large-scale challenges that caused a drastic curriculum readjustment. This model also shows a systemic and systematic way of redesigning the curriculum.

Educational leaders are enjoined to try developing a responsive curriculum by applying this model. Future researches using qualitative research designs may be undertaken to find out the effectiveness and efficiency of the proposed model.

REFERENCES

1. Abdullah, F. (2016). Integrate Technology In The Curriculum As An Effective Teaching Strategy. International Journal of Academic Research, 4(1), 40-50. https://www.researchgate.net/publication/336115867_Integrate_Technology_In_The_Curriculum_As_An_Effective_Teaching_Strategy

2. Adirika, B. N. & Okolie, V. C. (2017). Examining Models Of Curriculum Development And Processes: Implications For African Educational Heritage And Review. Social Science and Humanities Journal, 6, 325-342. http://sshj.in/index.php/sshj/article/view/44

3. Alsubaie, M. A. (2016). Curriculum Development: Teacher Involvement in Curriculum Development. Journal of Education and Practice, 7(9), 106-107. https://files.eric.ed.gov/fulltext/EJ1095725.pdf

4. Bachri, B. S. (2018). Curriculum Development and Implementation on Higher Education in Indonesia. Advances in Social Science, Education and Humanities Research, 212, 496-498. https://doi.org/10.2991/icei-18.2018.106

5. Bhuttah, T. M., Xiaoduan, C., Ullah, H. & Javed, S. (2019). Analysis of Curriculum Development Stages from the Perspective of Tyler, Taba and Wheeler. European Journal of Social Sciences 58(1), 14-22. https://www.europeanjournalofsocialsciences.com/issues/PDF/EJSS_58_1_02.pdf

6. Carr, W. G., & Mallam, M. L. (1943). Effects of the World War on American Education. Review of Educational Research, 13(1), 13. https://doi.org/10.2307/1168806

7. Charland, P., Martineau, M. D., Gadais, T., Arvisais, O., Turgeon, N., Vinuesa, V., & Cyr, S. (2021). Curriculum response to the crisis. Prospects. https://doi.org/10.1007/s11125-020-09526-6

8. Deborah, O. K. (2018). Lewin's Theory of Change: Applicability of its Principles in a Contemporary Organization. Journal of Strategic Management, 2(5), 1-11. https://stratfordjournals.org/journals/index.php/journal-of-strategic-management/article/view/229/274

9. Diwakar, V. (2015). The Effect of Armed Conflict on Education: Evidence from Iraq. The Journal of Development Studies, 51(12), 1702–1718. http://dx.doi.org/10.1080/00220388.2015.1056786

10. Gibbs, T. (2018). Curriculum development: A dynamic change inside the chrysalis. Medical Teacher, 40(5), 434–436. https://doi.org/10.1080/0142159X.2018.1457286

11. Gul, R., & Khilji, G. (2021). Exploring the need for a responsive school curriculum to cope with the Covid-19 pandemic in Pakistan. Prospects, 1–20. https://doi.org/10.1007/s11125-020-09540-8

12. Hoenig, T (2018). The Effect of Conflict on Education: Evidence from Sierra Leone. Munich Personal RePEc Archive, Paper No. 85064, 1-23. https://mpra.ub.uni-muenchen.de/85064/

13. Hussain, S. T., Lei, S., Akram, T., Haider, M. J., Hussain, S. H., & Ali, M. (2018). Kurt Lewin's change model: A critical review of the role of leadership and employee involvement in organizational change. Journal of Innovation & Knowledge, 3(3), 123–127. http://dx.doi.org/10.1016/j.jik.2016.07.002

14. Ireland, S. (2016). Save the Children – Education Disrupted: Disaster impacts on education in the Asia Pacific region in 2015. ReliefWeb. https://reliefweb.int/sites/reliefweb.int/files/resources/education_disrupted_save_the_children_full_report.pdf

15. Khan, R. A., Spruijt, A., Mahboob, U., & van Merrienboer, J. J. G. (2019). Determining "curriculum viability" through standards and inhibitors of curriculum quality: a scoping review. BMC Medical Education, 19(1), 1-11. https://doi.org/10.1186/s12909-019-1759-8

16. Li, C. & Lalani, F. (29 April 2020). The COVID-19 pandemic has changed education forever. This is how. World Economic Forum. https://www.weforum.org/agenda/2020/04/coronavirus-education-global-covid19-online-digital-learning/

17. Newlyn, D. & Blissenden, M. (2011). Tax Law Curriculum: Implications of Formal Curriculum Theory to Practice. Journal of the Australasian Law Teachers Association, 147-155. http://classic.austlii.edu.au/au/journals/JlALawTA/2011/14.html

18. Mai, M. Y. (2015). Developing Context-Based Science Curriculum: Humanizing Science Curriculum. Academic Journal of Interdisciplinary Studies, 4(1), 171, 184. https://doi.org/10.5901/mjss.2015.v4n1s1p171

19. OECD (2018). The Future of Education and Skills: Education 2030. OECD. https://www.oecd.org/education/2030/E2030%20Position%20Paper%20(05.04.2018).pdf

20. Pak, K., Polikoff, M. S., Desimone, L. M., & Saldívar García, E. (2020). The Adaptive Challenges of Curriculum Implementation: Insights for Educational Leaders Driving Standards-Based Reform. AERA Open, 6(2). https://doi.org/10.1177/2332858420932828

21. Pawar A. & Charak, K. (2017). Study on Adaptability of Change Management: Review of

Kurt Lewins and Kotter Model of Change. International Journal of Social Science and Management, 5(4), 79-83. https://www.researchgate.net/publication/339955706_Study_on_Adaptability_of_Change_Management_Review_of_Kurt_Lewins_and_Kotter_Model_of_Change

22. *Petretto, D. R., Masala, I., & Masala, C. (2020). School Closure and Children in the Outbreak of COVID-19. Clinical practice and epidemiology in mental health: CP & EMH, 16, 189–191. https://doi.org/10.2174/1745017902016010189*

23. *Pock, A. R. Williams, P. M., Maranich, A. M., Landoll, R. R., Witkop, C. T., Reamy, B.V., & Durning, S. J. (2021). Curricular Change and Resiliency in the Era of Coronavirus (COVID-19): The Uniformed Services University of the Health Sciences (USU) Experience. Military Medicine, 186(1-2), 212–218, https://doi.org/10.1093/milmed/usaa491*

24. *Schneiderhan, J., Guetterman, T. C. & Dobson, M. L. (2019). Curriculum development: a how to primer. Family Medicine and Community Health, 7, 1-6. https://doi.org/10.1136/fmch-2018-000046*

25. *Schwab, K. (14 January 2016). The Fourth Industrial Revolution. World Economic Forum. https://law.unimelb.edu.au/__data/assets/pdf_file/0005/3385454/Schwab-The_Fourth_Industrial_Revolution_Klaus_S.pdf*

26. *Supe, A. (2016). Designing a dynamic contextual curriculum. International Journal of Advanced Medical and Journal Research, 3(2), 55-57. https://www.ijamhrjournal.org/temp/IntJAdvMedRes3255-8481205_233332.pdf*

27. *Tiede, L. (1995). The Participant's Summative Perceptions of the Quality Function Deployment (QFD) Process as Used to Review a School Policy. https://ro.ecu.edu.au/theses_hons/662/*

28. *Todea, L., & Demarcsek, R. (2017). Needs analysis for language course design. A case study for engineering and business students. IOP Conference Series: Materials Science and Engineering, 200, 012064. https://doi.org/10.1088/1757-899x/200/1/012064*

29. *Trudi, C. (2017). Curriculum Renewal: Barriers to Successful Curriculum Change and Suggestions for Improvement. Journal of Education and Training Studies, 5(11), 115-128. https://files.eric.ed.gov/fulltext/EJ1161219.pdf*

30. *Zhao, Y., Watterston, J. (2021). The changes we need: Education post COVID-19. Journal of Educational Change 22, 3-12. https://doi.org/10.1007/s10833-021-09417-3*