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Article

Building a Leader Framework for Post-Pandemic Response Expertise for Higher Education Future Reality

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Abstract

A successful future for higher education is dependent on the level of preparedness to manage future crises that are no longer linear processes in the best way possible. The severe disruption of academic progress post-COVID-19 across the globe brought a growing sense of chaos in the education system. This forced education institutions to adopt a rapid re-design of institutional strategic systems that called for different kinds of responses in different contexts because previous successful leadership approaches often fail in crisis situations. However, the challenges brought about by the chaos have positively presented humanity with many opportunities to re-think and re-engineer a new way of doing business. Therefore, this paper designs and develops a post-pandemic conceptual model that is an approach to crisis management, quick decision-making, and quick problem-solving to enable general adaptation to future pandemics. Through a developmental research design and a comprehensive literature review, an adaptive emergence response cycle (AERC) was developed and built around the theory of chaos, the reflective practitioner theory, using the adaptive approach. One potential benefit of the post-pandemic response model was the creation of an emergency response equation that was best suited for the post-pandemic crises. This model allows higher education management to be protected by planning generalizable futuristic crisis models.

Keywords: adaptive emergence response cycle, post-pandemic response model, pandemic, theory of chaos, disruptions

Introduction

The spread of the COVID-19 virus and the subsequent closure of many educational institutions severely disrupted academic progress across the globe (Gouëdard, 2020; OECD, 2020). Education after the pandemic will never be business as usual because history has proved that previously successful management approaches to institutional strategies fail in crisis situations. There were visible struggles towards survival of the fittest in the education institutions in their bid to adapt to these changing circumstances of confusion. In the present day, the drivers of disruptive changes in education systems are no longer clear and well-defined, which often leads to the need for unplanned and unorganized responses in different contexts that call for different kinds of responses (OECD, 2020).

There were three major COVID-19-inspired challenges that faced governments, international and inter-governmental agencies, and education institutions (Zeleza, 2021). First, it was the slowing and stopping the spread of the pandemic. Second, it was how best to mitigate the extensive and damaging effects of the pandemic in the immediate and short term. Third, it was how to ensure survival and growth after the pandemic." The second and third challenges were the subject of interest in this paper. Many organizations experienced disorder while attempting to adapt to these challenges and yet, the education service to its students, communities and the world had to continue with the expected quality guarantees within the new disorders (Gouëdard et al., 2020). For example, many universities faced a chronic lack of infrastructure to deliver e-learning resources and students and staff were under-prepared for the emergency learning online. There were problems with access to computers and the Internet by both the students and the lecturers. Initiatives tended to disarm the existing leadership expertise in institutions amid the university's effort to minimize other challenges like costs, disease etc. Hence, the education institutions were forced to adopt a rapid re-design of teaching and learning systems, which led to, for example, the mass adoption of online learning strategies across the sector. Unfamiliar circumstances brought about by pandemics like COVID-19 are sometimes characterized as having high structural complexity. The gap between conceptual expertise and practical expertise is particularly difficult to overcome. By increasing the task performer's knowledge, transformative informing processes can have a significant impact on structural complexity.

The introduction of webinars to assist lecturers with the implementation of emergency remote teaching (ERT) was one of the pandemic response initiatives that were carried out. For example, the Association of African Universities (AAU) and open education resources (OER) Africa presented a series of four webinars on emergency remote teaching (ERT) strategies in 2020. For example, crisis management efforts have been applied across various organizations, including higher education (Ågerfalk et al., 2020). Higher education institutions, for instance, adopted emergency response teaching (ERT) as a means to swiftly react, adapt, and sustain university operations in order to minimize losses for stakeholders (Dill et al., 2020). In contrast to planned and designed online experiences, emergency remote teaching (ERT) is a temporary shift in instructional delivery to an alternative mode due to crisis circumstances (Bond, 2020). This involves the use of fully remote management and teaching solutions for instruction or education that would otherwise be delivered face-to-face, blended, or hybrid and was intended to return to the previous format once the crisis or emergency subsides (Bhuwandeep & Das, 2020). There were webinars

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presented by Professor George Siemens (Director: Centre for Change and Complexity in Learning) that focused on the role that MOOCs play during the unprecedented COVID-19 times. A successful future is held on one hand in an education that must be adapted to enhance the feasibility of emergency learning, for example, the integrity of assessment and examinations. At least there must be a level of preparedness amongst education institutions to manage future crises in the best way possible. Different scholars have previously suggested different processes for formulating and implementing higher education development projects. We look at Conyers and Hills, who discussed a project cycle as far back as 1984 (pp. 73-81). This was opposite to some ideas of a spiral process by Katz in 1975 and a ''project sequence'' (MacArthur, 1994. p. 156). Conyers and Hills (1984) ideas save as a good starting point for the processes that resonate with the post-pandemic eras (p. 81).

Opportunities Presented by Post-COVID-19 Era

On a more positive note, the post-COVID-19 challenges have presented humanity with many opportunities to re-think and re-engineer a new way of doing business, especially at a time when the fourth industrial revolution and technological advancement have become a reality of our times. There has never been a greater need and opportunity than this moment for the education sectors to work much closer together to produce a collective strategy and plan that redefines the future outlook of the broader education sector. It must be a plan that can proactively tackle future challenges and risks such as the one presented by COVID-19. Therefore, the purpose of this paper was to design and develop a pandemic response model that is initiated to help with a quick response to unforeseen disasters or crises. The proposed model will guide higher education institutions worldwide to harness the opportunities presented through a pedagogical innovation that has the potential to enable institutions of education to disentangle the fear of future pandemics or emergency crises and adapt to the readiness to act to any eventualities. The reality of the response model to transform education is built around the theory of chaos.

As we delve into designing and developing an adaptive cyclic model in this paper, it becomes evident that handling emergency crises demands creative problem-solving. Institutions must break free from conventional approaches and think innovatively to generate diverse solutions that cater to the university's evolving requirements. A crisis is defined as a sudden, low-probability but high-consequence event that poses a significant threat to one or multiple actors, be it individuals, organizations, or even society. Such events offer little time for a timely response (Bond, 2020; Mishra, 2020). Crises are characterized by confusion and uncertainty regarding the outcomes of actions due to insufficient resources to cope with the situation (Marinoni et al., 2020). Their intensity and geographical and temporal scope can vary (Pearson & Clair, 1998). The COVID-19 pandemic is a prime example of a crisis, requiring higher education institutions to re-evaluate their crisis response strategies. Amidst the chaos, organizations aimed to reassure their stakeholders, including employees, customers, and providers, by demonstrating their adaptability, resilience, and survival capabilities. In essence, they strived to create "islands of rationality and certainty" amid the turbulent sea of chaos, as described by chaos theorists (Thiétart & Forgues, 1995, p. 19). These islands served not only to reassure stakeholders but also to project an illusion of stability in the firms' decision-making and actions during the crisis. This way of thinking involves strategic planning, encompassing areas such as policy formulation and delivery methods, to precisely align with the swiftly changing needs, constraints, and resources, including faculty support and training (Carugati et al., 2020).

The Nature of Good Emergence Response Leadership

Good leadership requires openness to change on an individual level (Snowden & Boone, 2007). Truly adept leaders will know not only how to identify the context they're working in at any given time but also how to change their behavior and their decisions to match that context. They also prepare their organization to understand the different contexts and the conditions for transition between them. "Many leaders lead effectively—though usually in only one or two domains (not in all of them) and few, if any, prepare their organizations for diverse contexts" (Snowden & Boone, 2007). Emergency or turbulence is the realm of unknowables and the crisis demands decisive action. An example is given in Table 1 (Snowden & Boone, 2007).

Table 1
Leadership in Chaotic Situations

	The context's characteristics	The leadership job	Danger signals	Respond to danger signals
Chaotic	• High turbulence • No clear cause-and-effect relationship, so there is no point in looking for the right answers. • Many decisions to make and no time to think • High tension • Pattern base leadership	• Act, sense, respond • Look for what works instead of seeking the right answers • Take immediate action to reestablish order (command and control) • Provide clear, direct communication	• Apply a command and control approach longer than needed (cult of the leader) • Missed opportunity for innovation • Chaos unabated	• Set up mechanisms (such as parallel teams) to take advantage of opportunities afforded by a chaotic environment. • Encourage advisers to challenge your point of view once the crisis has abated. • Work to shift the context from chaotic to complex.

Reflecting on the Post-Pandemic Response Ideas in Education

The calls made around the world to come up with post-pandemic response ideas in the education system are a realization that after COVID-19, things will never be the same again. For years, change was slow and almost predictable, and therefore, there was no need for urgent responses to most of the changes. For education to be prosperous in this complex, changing world, it must draw from new practical realities that can be borrowed from those with futuristic minds or from those who can foresee unpredictable future times. Yet, institutions are characterized by 'dynamic conservatism' – 'a tendency to fight to remain the same' (Schön, 1973, p. 30). Development interventions in higher education have historically been geared towards conformity and uniformity. Yet, Schön, as early as 1973, observed the reality of the loss of the stable state. He commented that the belief in the stable state is a belief in 'the unchangeability, the constancy of central aspects of our lives, or belief that we can attain such a constancy' (Schön 1973, p. 9). It is interesting to notice that Schön, as early as 1987, was already moaning about the unpredictability of future times. He commented on a very important issue about education systems:

The loss of a stable state means that our society and all of its institutions are in a continuous process of transformation. We

must learn to understand, guide, influence and manage these transformations because we cannot expect new stable states that will endure our own lifetimes. We must, in other words, become adept at learning. We must become able not only to transform our institutions in response to changing situations and requirements, but we must also invent and develop institutions with 'learning systems' that are capable of bringing about their own continuing transformation.

Schön was on point, though he just didn't think about how to deal with the unpredictability. The apex of the post-COVID-19 era is for higher education institutions to change the way they think about development processes in all aspects. Previously, universities tended to take development and planning approaches that were more predictive (Nolan, 2002. p. 98). Development and planning were drawn up in advance, and implementation occurred in a linear, sequential fashion, for example, in strategic plans for 2030. Project decisions could be made in terms of a few controllable variables. There is thus an urgency to replace the out-of-date behaviors and thinking in education institutions. This should be in response to all education practices in either policy, technology, teaching, research, or general behavioral practices in transformation to match the unpredictable times. In other words, the response to post-COVID-19 in the education sector should aim to contribute to the transformation of educational discourse and development models that march the ideas of the 4th generation era abounds in the theory of chaos. Education systems that embrace the post-pandemic eras will reflect hope for the future of the student. This will empower schools and universities to participate in their own educational development without fear of using whatever intellectual skills (rational or logical) they possess to eliminate the various dimensions of the post-pandemic era. While most universities want concrete tools now because they needed to use them yesterday in the post-pandemic periods, this paper focuses on how to help institutions and their leaders to have adequate education support in the development of an institutional emergence or crisis model.

Problem Statement

Judging from the background of the problem, the COVID-19 pandemic significantly disrupted higher education worldwide, and its impact will influence how universities approach various aspects of their operations. The pandemic has exposed the need for adaptable and visionary leaders in higher education institutions who are well-versed in crisis management. Building a leadership framework would involve identifying the skills, competencies, and qualities required to effectively lead institutions in the post-pandemic reality. It is obvious that education institutions need a crisis response model built around the theories illustrated in Figure 1 that is key to developing and creating the optimum environment in which management and their institutions are always ready to respond to unforeseen educational circumstances with very limited interruption.

The Aim and Purpose

Therefore, the aim of this paper is to identify an approach to quick decision-making and quick problem-solving design through the development of a post-pandemic conceptual model that enables general adaptation to future pandemics. The purpose is to give crisis-informed expertise to higher education environments through knowledge or conceptual skills that lead to the dispositions of the static state of mind by management.

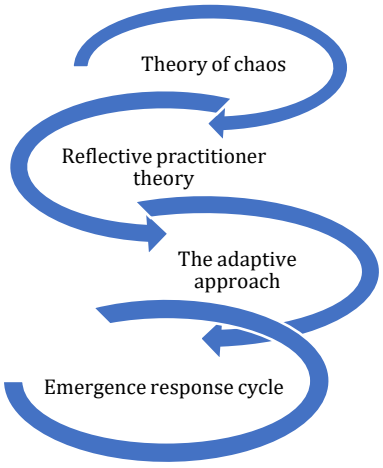
Methodology

The design of the emergence response model was achieved through development research that provided a process by which the researcher gets insight from literature and personal experience to create a product by designing, testing and revising several prototypes (Van den Akker, 1999, p. 5). Understanding the model through the theory of Chaos, the paper employs the practitioner reflective theory (PRT) and the adaptive planning process to design the model, which is essentially a best practice approach to quick decision-making and quick problem-solving. The AERC is made up of five major phases with pipe-outs. The major step involves the identification of the critical incident (the educational disruption) and the context of the disruption, like the post-pandemic context. This is followed by clearly naming the general objective. The next stage will be to quickly take the decision and plan of action that must be clearly specified in step by step fashion, followed by quickly implementing the action and then assessing and evaluating the next step to see if it was a feasible move. The AERC results in the creation of an emergence response equation grounded in the theory of chaos and is best suited for post-pandemic crises. Ideas from several renowned researchers of online technology and learning are put together to come up with a model that allows for an easier and more flexible process for making important online teaching decisions (Calder, 2013; Cutright, 2001; Forgues & Thietart, 2016; Khanal et al., 2021; Nolan, 2002; Parra & Tan, 2021; Schön, 1973; Siemens, 2004; Snowden & Boone, 2007; Turner, 2016; Zeraoulia, 2012). The purpose of this paper is to suggest a crises-response model that has a firm grasp of elements that are informed by the post-pandemic emergency crises. The model leads to the dispositions of post-pandemic response-informed institutions and further guides the higher education management team to solve the crises (challenges and problems) that originate from post-pandemics during any project development in education.

The Theoretical Framework

The theory of chaos, the reflective practitioner theory and the adaptive approach referred to in Figure 1 were selected as the vehicles to drive the idea behind the AERC model, as they encompassed all aspects of the post-pandemic educational setting, Considering the limited existing literature on emergence response models to crises like the Covid-19 pandemic, an examination was conducted drawing from various works (McBride, 2005; Nolan, 2002; Schön, 1973; Thiétart & Forgues, 1995). The primary objective was to analyze and comprehend the institutional aspects of adapting and adopting university practices in emergency crises. As this unprecedented situation presented a unique challenge, there were minimal established theories to support an emergency response at the level of higher education institutions. In contributing to this domain, our study delves into the emerging process that aids management decisions and employees' actions when familiar tools and practices become obsolete, yet core activities must be sustained (Ågerfalk et al., 2020). The utilization of insights from the chaos theory (McBride, 2005; Thiétart & Forgues, 1995) and the concept of adaptive development (Nolan, 2002) (Figure 1) enabled us to navigate and develop a post-pandemic response model, the AERC.

Figure 1
The Summary of the Theoretical Framework



The Theory of Chaos and the Unpredictability of a Changing Education Environment

Chaos is defined as the "breakdown of predictability, evidenced in complicated arrangements that initially defy order" and, therefore, originates from "a cryptic form of order" (Siemens, 2004, p. 3). Prediction about the future is not just hard but impossible (Turner, 2016, p. 1)." The Chaos theory illustrated in Figure 1. This is because the theory of chaos assumes that at a certain point everything may change or break and therefore, systems and other infrastructures must be built and deployed in rapid, repeatable, ideally automated ways (Calder, 2013; Khanal et al., 2021). These systems must continually respond to continual changes in the unpredictable systems. The best practice would be to monitor and create systems that can operate and invest in a change-dominated world. The ability to recognize and adjust to pattern shifts that focus on enabling the creative and adaptive capacity of complex systems within a context of knowledge-producing organizations is, therefore, key.

Schön's central argument that aligns with the theory of chaos was that 'change' was a fundamental feature of modern life and that it is necessary to develop social systems that could learn and adapt. The process by which education institutions must transform themselves is called 'dynamic conservatism' in Schön's book "*Beyond the Stable State*: In this book, he argues that "social systems must learn to become capable of transforming themselves without intolerable disruption" (Schön, 1973, p. 57). His crucial engagements are only being appreciated in the post-COVID-19 era. Effective leaders learn to shift their decision-making styles to match changing business environments (Zeraoulia, 2012).

From the deep education perspective, it is important to note that systems are not linear (Forgues & Thietart, 2016). In the process of developing any education system, nothing can be foreseen or predicted and hence, there is a need for quick response systems to be developed. Management and leadership that can plan, create, and manage such quick response systems need to be knowledge-informed through either professional development or any other serious training structures. Best practices would then be the ability to create systems that operate and invest in a change-dominated world. For example, when events or crises hit individuals or groups, there must be a spontaneous capacity to organize and respond to these challenges (Parra & Tan, 2021). This stands in direct conflict with a present organization that plans, for example, "strategic plan 2030" and beyond. It is a concept that seeks alignment that is informed by a systemic understanding of static models that search for profound and sustainable change (Parra & Tan, 2021). Turner (2016) bluntly states that the theory of chaos does offer answers to unstable and chaotic environments because education systems are contextualized in order to address problems and issues that face society at a particular point in time. By better understanding how the theory of chaos opens what is possible, educators can find encouragement to seek alternatives from traditional institutional practices (Shukie, 2019).

The possibilities of the theory of chaos opened-up new ways of thinking and renewed support for ideas and theoretical models that challenge the established order. 'Chaos…recognizes the connection of everything to everything…the ability to recognize and adjust to pattern shifts is a key learning task. Chaos holds a 'cryptic form of order' that lies in wait of discovery (Siemens, 2004, p. 3-4).

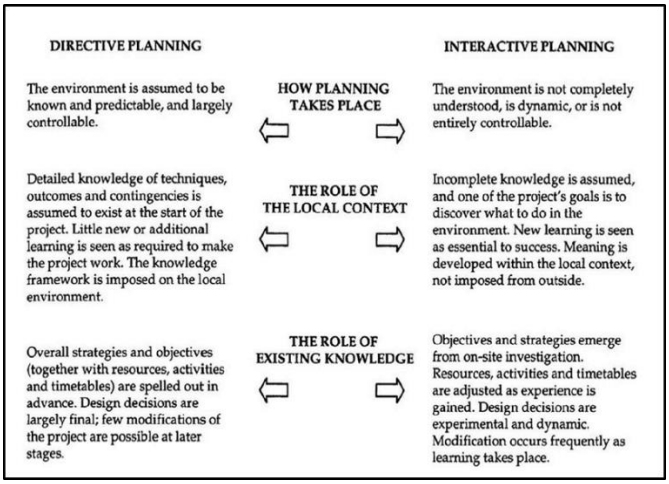
In contrast to Siemans's idea it is also found that chaos is also a space of creation that makes possible the thinking of new concepts. Chaos theory is open to varying interpretations, primarily that it creates a theoretical basis for believing that nothing can be predicted, and consequently nothing is certain except uncertainty (Forgues & Thietart, 2016). Chaos Theory recognizes unpredictability as a fundamental feature of all networks and scientific (social and natural) exploration. Siemens suggests that, 'chaos is a new reality for knowledge workers' (p. 4) and argue that it provides opportunities to shift away from traditional approaches to new pedagogical approaches. It is against this background that an AERC was developed.

The Adaptive Planning Approach

The adaptive (interactive) planning approach on one hand was the preferred approach in this paper to think about post pandemic situations (Nolan, 2002, p. 99). The adaptive planning approach is a process of planning that relies heavily on information and learning which justifies part of the phases in the AERC. Nolan (2002, p. 99) clarifies it as follows:

> Interactive planning is based on the premise of uncertainty, the likelihood that conditions, problems and solutions are not completely known at the outset. Knowledge must be obtained from the context as the project proceeds, and appropriate modifications made based on this learning or reflection. Linear sequence is no longer assumed. With adaptive planning, project decisions are often 'impure' and made between designers and the project environment during the project cycle, and a structure that will permit the reassessment and adjustment of plans previously made. Implementation often becomes creative and experimental, requiring innovative management responses.

Figure 2
Directive and Adaptive Planning: Main Distinction



Note. The image from the "*Development anthropology",* by R. W. Nolan, 2002, (p. 99) Routledge. https://doi.org/10.4324/9780429501005.

As explained in the introduction directive planning is what has been the norm before the conscientization and complexities of post pandemics like COVID-19. Therefore, the development of the education systems must have relevance of the project environment as well as local knowledge. In a developing context, planning must be a learning process. No planner can provide for all possible eventualities. Even if we intend building a learner management system which may seem to be a straightforward development project, one must take flexibility into account and make provision for participatory processes and a learning approach. This is what being a development practitioner is all about. In development, there are no blueprints or recipes for success. Post pandemic development projects call for different approaches. It would thus be preferable of higher education, to acquaint itself with participatory and learning processes of project planning post pandemics as opposed to the previous project planning that favored blueprint planning. This is because blueprint planning is very seductive and require project proposals to be submitted in a rigid framework, called the logical framework. As a reflective development practitioner, one need to also be aware of the weaknesses of the AERC model developed around the adaptive planning process's disadvantages and the

ways in which it can be manipulated to make it more flexible and people-centered.

The Practitioner Reflective Theory as the Harness Behind AERC

It was Schöns (1930-1997) 'reflection-in-action'' theory that made a remarkable contribution to the understanding of the context of a post pandemic era. Through his crucial theory and practice, his innovative thinking around 'reflection-in-action' led to the development of reflective practice within the education systems, organizations and communities for which the adaptive response model in this paper is built. We focus on one important element on the relationship of reflection-in-action to educational development described in his book "*Technology and Change,* He offered an approach that is based on a close examination of the distinctive structure of reflection-in-action'. Schön's (1983) model was originally used for professional or staff development but was later adapted to all spheres of educational development because of its realist practicalities.

Argyris and Schön (1996) believed that people have mental maps regarding how to act in crises or non-crises situations. It is these maps that guide people's actions in the way they plan, implement and review their actions rather than the theories they explicitly espouse. In what I would call a crises response pedagogy, Schön' brought an understanding of the notions of reflection-in-action, and reflection-on-action being central to the area of what he described as 'thinking on our feet'. It entails quickly building new understandings to inform actions in the situation that is unfolding. The project planners or developers allow themselves to experience surprise, puzzlement, or confusion in a unique situation in which they find themselves in. "Thinking on the feet" which is explained through the reflective practitioner theory is the baseline and the cornerstone of this paper. *"When a practitioner makes sense of a situation he perceives to be unique, ...The familiar situation functions as a precedent, or a metaphor, or... an exemplar for the unfamiliar one"* (Schön, 1999, p. 138). "Thinking on the feet" can be compared to a praxis where there is a continual interplay between thought and action

> In praxis there can be no prior knowledge of the right means by which we realize the end in a particular situation. For the end itself is only specified in deliberating about the means appropriate to a situation. As we think about what we want to achieve, we alter the way we might achieve that. As we think about the way we might go about something, we change what we might aim at. There is a continual interplay between ends and means (Bernstein, 1983, p. 147).

The Cyclic Character in the Reflective Practitioner Model

The reflective practitioner theory is a leading idea that allow the development of responses and actions in a crisis (Smith, 1999). In a clear philosophy of life "between the technical (productive) and the practical" the act of reflecting-on-action enables us to respond to unfamiliar circumstances in order to develop sets of questions and ideas about the activities and practice (Aristotle 2004, p. 209). Eraut (1994) commented that 'when time is extremely short, decisions have to be rapid and the scope for reflection is extremely limited. Reflective practice suggested by Schön was often criticized for its lack of depth with respect to action being informed, or the focus on the commitments entailed to the action (Smith, 1999, p. 150). The Reflective Practitioner Model is therefore essentially an approach to decision-making and problem solving that manifest itself in the post pandemic crises response model. The integration of the work from Schön (1991) and Freudenthal's (1988) development research cyclic process provides insight into the reflective practitioner model of reflection in action. The cyclic character of the design consists of research cycles in which thought experiments and action experiments alternate. The cycles lead to a cumulative effect of small steps, in which action experiments provide 'feed-forward' for the next thought experiments and the next action (Freudenthal, 1988). A macro-cycle of the design consists of three phases: the preliminary design phase (Diagnosing and planning action), the action experiment phase (acting), and the phase of retrospective analysis (evaluating action). In the last-mentioned phase, the reflection captures the development of the insights of the researcher. As a result, new hypotheses or new instructional activities emerge, that form the feed-forward for the next research cycle that may have a different character, according to new insights and hypotheses. The Reflective Practitioner Model is therefore essentially an approach to decision-making and problem solving. The practitioner allows himself to experience surprise, puzzlement, or confusion in a situation which he finds uncertain or unique.

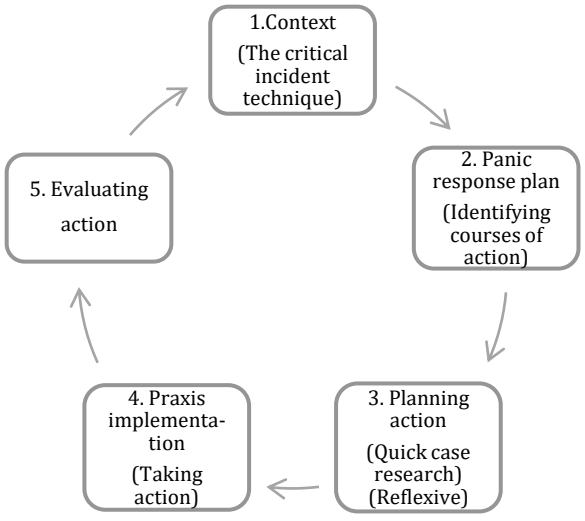
Introducing the AERC

In the realm of crisis management within higher education institutions, there is a dearth of models that address adoption during emergence crises. This research paper aims to fill this gap by investigating the explorative practices employed in the strategic planning of universities, drawing lessons from the experiences during the COVID-19 crisis. Drawing on qualitative data from three theoretical frameworks—chaos theory, the reflective practitioner theory, and the adaptive approach (as illustrated in Figure 1)—the paper introduces a cyclic model of an adaptive response in the context of an emergence crisis. The proposed model illustrates that practices in response to an emergence crisis undergo quick and reflective adaptive phases in a continuous cycle that allow management to adjust with well-timed approaches.

The Adaptive Emergence Response Cycle (AERC)

Crises or post-pandemic responses must be planned, and appropriate responses must look at the context in which that planning should happen. Planning everything, from the spontaneous (unplanned) experiences in education to the experiences educationists thoughtfully plan and intentionally implement, do not normally happen in linear processes. A theoretical model the AERC (Figure 3), consisting of a development research cyclic process that took insights from the conceptual frameworks discussed above was developed. The cyclic character consists of a research cycle in which thought options and action decisions alternate. Using Coghlan and Brannick (2001) idea, the cycle is improved by involving pipe outs at each individual phase and applying the monitoring of the process from one phase to the other.

Figure 3
The Adaptive Emergence Response Cycle (AERC)



The Phases in the Adaptive Emergence Response Cycle

The AERC model is named "the solve problems as they arise" model. Among the obstacles often encountered in the real world, like the Covid19, is insufficient time, data and manpower as well as inadequate communication and uncertainty about the process of implementation. Post COVID-19 era has taught us that it is often important to think about what we want to achieve first and the work under a very strict monitoring process to finds order in the disorder. In an unpredictable world the emergence, it is normally the top-down approach to projects that work better.

The model allows for the planning process to have interrelated phases in a cycle. They do not exist independently of one another and can be replaced by other phases. The advantage of this model is that it provides for alterations within phases that fit nicely into a self-reflective cycle that consists of small quick research ideas. In some cases, a restart needs to be done and therefore the arrows can either move forward or backwards and the lessons learnt in the day to day can be infused into any appropriate phase of the cycle at any time. If the management in higher education do not understand this as the starting point to deal with a chaotic world, then they are working with the prophet of doom. So, the project planning process is far more complicated than the diagram indicates. It must be noted that, some phases are dispatched more quickly than others and sometimes it is not even necessary to move from one phase to the next because the basic objectives have been achieved. Some phases can be jumped or removed if they become suddenly unnecessary, hence the existence of the pipe outs.

Phase 1: Context (The Critical Incident Technique)

The initial phase is to identify and accept the disruption, the size of the disruption, the context of the disruption, the who in the disruption and then engage in a framework for team approach on the way forward. Using Flanagan's idea that he brought about as early as 1954, the institution determines the events that are considered "critical" and then uses these events to analyze assumptions. A critical incident is a value judgment one makes, and the significance that one attaches to the meaning of the incidents (Bruster & Peterson, 2013; Tripp, 2012). An important aspect of a critical incident is to have the education institution unpack the event in order to examine the judgements that are attached to ways of seeing events and practices (Tripp, 2012). Reflective practice and increased professional judgement are the underlying goals of the critical incident technique (Badia & Becerril, 2016). The team will be involved in quick planning round tables in the identification of desired objectives and targets that could solve the critical situation now. This will allow for the creation of an organizational strategic team that will guide the planning, development and implementation. As soon as the critical aims and objectives have been identified a specialist team is put to establish the necessary and urgent organizational framework which will be responsible for planning and the implementation of planning. This is a process that need to be followed post pandemic. The department or the ministry of education will provide the response guidelines to indicate the course of a country's actions or plans that align with the national response framework. They can formulate more specific objectives or deny some of the proposed objectives before signing off the way forward that indicate medium and long-term priorities. The importance in this phase isn't about solving the problem quickly but is about actually identifying the problems in the crises.

Phase 2: Panic Response Plan (Identifying Several Alternative Courses of Action)

This phase is devoted to identifying and specifying several courses of action which may be adopted to solve the institutional problems and achieve objectives. The courses of action identified during this phase may take the form of either a written planning document or a series of proposals for specific development programmes or projects. There are various techniques for weighing up such proposals against one another, ranging from professional assessments and intuitive thinking to highly formalized, systematic and mathematical models. The case research technique comes handy in this phase since it is an open and fair like a tender process.

Phase 3: Planning Action (Quick Case Research) (Reflexive)

This is the phase during which various proposed alternatives are weighed against one another and appraised. The advantages and disadvantages of alternative courses of action are determined and submitted to those who will ultimately choose between the alternatives. The choice of data, the collection and processing are carried out as per perceived need. Appraisal techniques work well in a case research atmosphere.

Phase 4: Implementation

The implementation of plans become part of the quick serious planning process. This can involve the quickly advertised tender process also going through the appraisal process by the institution. The academic or professional planners are not directly involved in the implementation of plans. The tender guys decide how to operationalize the perceived plans of phase 3. If this does not work the process can go back to phase 3 or phase 2.

Phase 5: Evaluation

The final phase in the cycle of development planning is the evaluation of the implementation of the project or the planning. This phase is intended to establish and determine to what extent intended objectives have been realized. This cycle makes provision for continuous evaluation throughout all phase that can result in a pipe out or a re-think and re-plan of the project solution. That is why evaluation in this cycle is closely linked to monitoring.

An Equation Resulting from the Model

The NYAMAYI equation (For post pandemic education systems crisis success)

While there are dozens of disaster prevention and development models around the research world, there is noticeably little for crisis management and solution. The purpose of this paper is to develop a post-pandemic conceptual model that is an approach to quick decision-making and quick problem-solving to manage crisis and enable the general adaptation to future pandemics. Awareness + critical incident + hierarchy of leadership command + tender success =effective post pandemic solution which can be explained in a post pandemic response model equation.

The NYAMAYI equation:

$EmS = D + HA \times G\% \times V$

The emergence solution model offered is based on the following equation: $EmS = D + HA \times G\% \times V$ is explained where the solution of an emergency (EmS), is a function of a community's disaster (D), its human and asset exposures (HA) to that disaster Geographical area of occurrence% (G%) G: 0-100) and the vulnerabilities (V) of those exposures.

Discussion

Motivation for the Adaptive Emergence Response Cycle model

The importance of "on the ground" rapid and thoughtful research, along with immediate decision-making in response to chaotic (crisis) situations, is reaffirmed by the adaptive cyclic model. This model contributes significantly to the ongoing discourse on crisis management and practices that concern exploration and exploitation of crisis situations. It emphasizes the relevance of adopting the chaos theory when facing unforeseen and turbulent situations. Additionally, it highlights the pivotal role of the just-in-time, quick reflective research cycle (Alvarez et al., 2018). By integrating the reflective cycle with the adaptive

approach, this model offers valuable managerial insights into emergent crises. It facilitates exploration and exploitation of possibilities in response to the crisis the discovery of new practices and.

The post pandemic response model, or "the solve problems as they arise model" is used mainly as a tool to facilitate innovative responsiveness to any post disaster project. This is mainly because its phases always start with the question "We are in trouble with … What must we do now." It is a tool used as a blueprint for top-down disaster response project planning, implementation and evaluation. This is planning on your feet and therefore, if there is no disaster the normal project planning should take place. Unfortunately, this is going to be the realistic model for most future unanticipated disaster events that are occurring in today's happenings not only in education but in life and fits nicely around the theory of chaos. At each phase of the cycle, there exist an outlet pipe that allows for abandonment of the idea if it does not work for the anticipated project. This is because a lot of ideas can be abandoned during the post-identification formulation stages, whilst others drop out following appraisal or because negotiation for their financing cannot be completed (MacArthur, 1994, p. 138). This makes this cycle a unique tool for post-pandemic response expertise. The continued life of this post -pandemic response cycle projects is guaranteed by the fact that it meets the objectives of today and satisfies the institutional goals within its funding ability. The response cycle must be viewed as an adaptive approach process of testing propositions about the most effective means of coping within complex social problems and must involve all possible role players. The model does not represent an end but is used as a means to an end. This paper also offers a work in progress model, that allows the possibility of exploring better process models with contextual relevance.

The cycle is unique in that it continuously reconnects to context or situation. This is very important since for example in a pandemic, the contexts of either continual disruption or improvements keep changing goal posts. The rate at which the cycle revolves depends on the nature of the stability of disruptions or on the rates of improvement. The continual use of the word "quickly "indicates the urgency and the speed that is required to exercise and execute the steps in this cycle. It is important to note that irrespective of the speed required to execute the steps in the cycle very quickly in a pandemic, the cycles should adhere to strict measures of quality team approach/ relationships, quality of the action process and the quality of the outcomes.

The Purpose of the Post Pandemic Response Model in Education

The AERC examines and promotes an adopted method of a cycle of micro or macro response activities. It is a set of quick interactive and practical research activities that are part of an adaptive learning product that can be developed by the education community. The product can be categorized as a micro-level research activity within the education system wherein tasks or solutions are adapted in real time. The micro research feedback identifies where remedial action is needed as quickly as possible. Corrective ideas are implemented and the corrective education activities in the cycle continues until mastery of outcomes are achieved.

The creation and sustenance of post pandemic responses need thought as we redesign and reincarnate the education institutions for the future. The Adaptive Emergence Response Cycle is made up of a cumulation of two closely related ideas that are made up of research and reflection. The cycle is a problem solver. To solve a problem one needs to reflect, but one needs to reflect very quickly. Imagine if there is fire in the house. You need to identify the critical incident which is the fire in the house and think quickly on what to do or you burn to death. Taking the fire example one might think of running for the door, only to realize that that is where the fire is blazing harshly. The window might be the quick option. The cycling in the pandemic response model need to go at a very fast rate to allow the identified critical incident to minimize disruption. During reflection in problem solving there is need for research. The type of research is dependent on the reflection that has taken place. One of the most important aspect of any research is its quality and therefore relevance in terms of results and applicability. Applicability is governed by the recognized urgency in the need for a solution.

Shortcomings

The Adaptive Emergence Response Cycle (AERC) tool is a useful tool for analytic purposes but also has shortcomings. It allows less time for team participation in the planning than would happen in already anticipated projects. The post-COVID response cycle is much more complex than what is presented here because, we must be made aware that certain key moments in the life of a project cannot all be captured in a simple paper-based representation tool. It must be noted that the emphasis of this paper is on the general process and not on individual projects.

Conclusion

The unpredictability of future pandemics or crises makes it challenging for anyone to foresee their occurrence. In such uncertain circumstances, managers require assistance in facing and responding to these challenges. This AERC model, firstly, aids managers in anticipating and comprehending the most suitable strategic responses to survive emergence crises and achieve a swift recovery. Secondly, managers should embrace an active reflective research approach throughout the entire process, promoting bottom-up appropriation and reciprocal adaptation between processes, which contribute to reinforcing the new organizational environment. Since this crisis represents a novel situation for managers as well, they should allow some leeway for exploration and the possibility of failure without severe consequences. This willingness to experiment can foster innovative solutions. Lastly, institutions should cultivate the long-term impact of crisis-born innovations. Often, the immediacy of changes brought about by crises can fade quickly when people revert to their old behavioral patterns. By nurturing and sustaining these innovations, institutions can fully benefit from their positive effects in the long run.

The concept presented here deepen the understanding of the preparedness and resilience that is needed by leaders and managers in all education institutions. The pandemic response model can expedite universities' support to leap into the fourth industrial revolution (4IR) and can easily catapult the education sector into the post pandemic era. Through the theory of chaos, we encounter the infinite possibilities from which we might create solutions to global, national and regional challenges.

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