Polarity Based Model for Guiding Medical School Strategy During Crisis - A Cross Sectional Qualitative Study

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Abstract

Background: Crises like the COVID pandemic in academia can best be dealt with as a polarity that needs to be leveraged rather than a problem that needs to be solved. This work aimed at utilizing the Polarity Approach for Continuity and Transformation (PACT)™ to establish a guide for medical schools during times of crisis to minimize the effect of crisis-driven decisions on strategic growth. Methods: A qualitative study followed the 5-Steps of the PACT process was conducted. A virtual mapping session was held with 108 medical educators from 22 countries to determine the upsides and downsides of strategic orientation and crisis management subsequently. Results: Four polarity maps were generated identifying four tension areas; University reputation, mission, teams, and individuals followed by a 72-item assessment and another mapping session to map the warning signs and action steps. A comparison between private school scores and the whole cohort of respondents showed that private schools had higher scores in all tension areas but still showed the least score for the “teams” tension. Conclusion: This study highlighted the importance of taking measures to communicate the mission and supporting team functions inside universities either by enhancing resources or utilizing time and effort-saving strategies.

Background

The COVID-19 pandemic shook the world of academia to extremes [1]. Medical schools were worst affected, due to the innate requirements of medical training that commands close communication and physical interaction among doctors, patients, family members, healthcare teams, support staff, and so on [2, 3].

Nevertheless, medical schools across the world navigated through this unprecedented situation through crisis management by introducing drastic changes in methods of teaching and assessment [4, 5]. The magnitude of this change was huge and automatically most health care institutions shifted to online mode to ensure continuous transfer of knowledge and skills to their students [6-9]. The crisis response was very efficient in most situations and students were successfully examined to be promoted to the next year [10-12]. However, many of these solutions seemed to be temporary and experts recommended focusing on the strategic plan as well, to achieve long-term sustainability [13].

In addition, the reality of pandemics extending over the span of a new academic year drew attention to the fact that the solutions to educational problems needed to be more concrete and permanent [14]. Another realization was that the schools functioning in reactive mode to the crisis were more focused on technical needs rather than student engagement, which might disrupt many strategically designed activities directed towards the overall growth and accreditation of the organization [15].

The hypothesis is that while extended crises like the COVID pandemic are bound to end at one point, the situation can best be dealt with as a polarity that needs to be strategically managed rather than a problem that needs to be solved [16].

In health care, crisis and strategic management approaches should be considered as interdependent processes and managed as "both/and" practices instead of "either/or" judgments [17]. If schools can successfully manage the shift from crisis mode to a strategy-oriented mindset, they can ensure that their development is minimally affected by the crisis interruption.

Polarity Approach for Continuity and Transformation (PACT)™ is an instrument which that enables an individual, team, or organization to analyze and manage opposing dilemmas in a rapidly changing ecosystem. Many authors have applied (PACT)™ in health care to navigate the conflicts while leveraging the strengths [15, 17-19].

This work aims at utilizing the (PACT)™ model to establish a guide for medical schools that is usable during times of crisis to minimize the effect of crisis-driven decisions on the strategic growth and development of the schools.

Methodology

This study is based on a qualitative approach using content evaluation for deductive analysis. The study followed all the five steps of the (PACT)™ model as shown in Figure 1. The five steps are Seeing, Mapping, Assessing, Learning, and Leveraging [20]. All the experiment protocol for involving humans was in accordance **to guidelines of Declaration of Helsinki.**

Participants

The participants in this study are medical educators from all over the world belonging to different levels of management. Medical faculty who are involved in education development at the level of the school or the country were included in the focus group discussion (FGD). Additionally, the assessment tool was sent to all faculty of various medical colleges.

The five steps of the (PACT)™ model

Step 1, Seeing.

The research team recognized the tension in the shift from the pole of growth strategy implementation and the embrace of the pole of crisis management. This was identified through a focus on outcomes of previous post-COVID studies and publications [13].

Step 2, Mapping.

Polarity was assessed in detail by mapping the key elements of the tension as expressed by key stakeholders. 108 medical educators from 22 countries, with diverse expertise in education and

leadership, participated in this study. 30% of them were active decision-makers. The polarity was mapped using (PACT)™ through series of virtual meetings based on the following protocol:

A brief introduction was given to all participants about the study concept and a narrative of one school shifting from the conventional strategic imperatives to adopt the crisis response mode post- COVID-19 strike. Then, they were oriented to the concept of polarities, mapping of vital dimensions of tension areas, and their interdependency utilizing a Polarity Map. They were then divided into four groups, each with one investigator, employing the 'breakout room' function of ZOOM. Each group was provided with a unique question from the Polarity Map, to contemplate and respond to.

The Guiding question

(Group 1) What are the benefits which emerged from the use of short-term responsiveness (crisis management) in the COVID-19 pandemic (reflect on the impact on individuals (students, faculty), teams (working groups), organization mission, University reputation to those from the outside)?

(Group 2) What are the benefits of the university using a strategic orientation (long term / future needs) that are realized during the COVID-19 social distancing (reflect on the impact on individuals (students, faculty), teams (working groups), organization mission, University reputation to those from the outside)??

(Group 3) When short term responsiveness (crisis management) in the COVID-19 pandemic is used to the neglect of strategic orientation (long term / future needs), what are the limitations (reflect on the impact on individuals to the neglect of (students, faculty), teams (working groups), organization mission, University reputation to those from the outside)?

(Group 4) When strategic orientation (long term / future needs) is used to the neglect of short-term responsiveness (crisis management) in COVID-19 pandemic, what are the limitations (reflect on the impact on individuals (students, faculty), teams (working groups), organization mission, University reputation to those from the outside)?

Data analysis

The ZOOM recording was transcribed by the researchers and coded accordingly. Results were analysed and grouped thematically. Then the key themes were assigned to each of the map's quadrants, based on the predetermined categories namely University reputation, mission, teams, and individuals. Two independent investigators verified the accuracy and minor differences were addressed through discussion. Items were identified and mapped in four different polarity maps.

Step 3, Assessing.

Seventy-two assessment statements were derived using the (PACT)™ language, developed by Polarity Partnerships (https://assessmypolarities.com/).

An independent group of researchers (NW, EA, AK, NN) revised the assessment items to match with the chosen outcomes. The assessment was piloted among 10 respondents and language refinements were performed accordingly. The final assessment tool was then administered online to faculty and staff of various universities.

Step 4, Learning.

The results were analysed and represented in the (PACT)™ web tool, in which each quadrant was coded based on the frequency of its appearance. For each quadrant, the highest-scoring item was identified as a priority strength or vulnerability.

Results were then color-coded based on the frequency into three groups namely, mild, moderate, and severe (http://assessmypolarities.com/). Items belonging to moderate and severe groups were placed as priorities for leveraging.

Step 5, Leveraging.

This is the final step in which the Action Steps (to optimize benefits) and Early Warning Signs (to minimize failure) are identified. The participants were split into four groups, during FGD conducted via ZOOM and each was allocated with one question specific for each polarity.

(Group 1) What are the actions/measures you and/or your organization can or could take to gain or retain the benefits which emerged from the FGD on short-term responsiveness (crisis management) in the COVID-19 pandemic (who is going to do what by when?)

(Group 2) What are the actions/measures you and/or your organization can or could (imagine what could be in addition to what is) be doing take to gain or retain the benefits which emerged from the FGD on strategy (long term orientation) in COVID-19 pandemic (who is going to do what by when?)

(Group 3) What are the things you can quantify (measurable indicators) that will guide you to know that you are moving towards the downside of using short-term (tactical) responsiveness? (reflect on individuals (students, faculty), teams (working groups), organization mission, University reputation to those from the outside)? Focus on Why things are happening… comments/ complaints

(Group 4) What are the things you can quantify (measurable indicators) that will guide you to know that you are moving towards the downside of using strategic orientation (long term) (imagine what could be in addition to what is)? (reflect on individuals (students, faculty), teams (working groups), organization mission, University reputation to those from the outside)? Focus on Why things are happening… comments/ complaints

Ethical Considerations

Prior to starting the study, Ethics approval was obtained from Ain Shams University Research Ethics committee. The consent number is (R 01/2021). An informed oral/ written consent was obtained from all the participants.

Results

Findings from the assessment were mapped into the online polarity assessment system and the results were extracted. 214 participants responded to the assessment. Respondents were from at least 22 countries all over the world with participation from at least four continents. Findings from the assessment were documented on four polarity maps highlighting scores of individual items and the prioritized strengths and vulnerability of each map (Fig.2-Fig.5). The results of the assessment reveal that the four tension areas appeared to be well leveraged (Fig. 6).

Action steps and warning signs:

Findings from the second FGD were identified and mapped on the relevant sections of the maps taking into account the prioritized strengths and vulnerabilities. These action steps and warning signs are to become the recommendations of this study (Table 2-3)

Regarding important areas that were identified in the study, a comparison was done between public (governmental schools) and private sector schools. Making the baseline of the study the governmental schools. It was evident that there was a change in the categorization of important aspects upside and downside of the poles in a number of tension areas (Table 1).

Discussion

Assessment methods and frameworks are gradually increased in numbers every day with diverse objectives, dimensions, and indicators in a trial to address the research and quality demands [21]. The presence of various tools reflects the conventional gap analysis in the assessment that often fails to show the whole picture dimensions. One reason could be related to the focus on one aspect, pole, or dimension of the problem ignoring the paradox. Sir Paul Callaghan stated that “The nature of paradox, turning things on their head, flipping ideas upside-down— and knowing how to reconcile and ride the tension of opposites—is at the heart of leadership and indeed life.” -quoted [22].

Polarity thinking employs ‘AND’ to link the two poles while problem-solving habitually applies ‘OR’. It is about Leveraging Polarities to maximize the upsides and minimize the downsides. The Polarity Assessment™ tool offers an accurate measurement of the dynamics of complex and interdependent systems as it focuses on "both/and” Polarity Thinking facilitating the leverage creation for the complex and critical challenges that all leaders, teams, and organizational systems face [23].

Thematic representation of data

The authors recognize that the responses of the participants in the polarity mapping should be considered under four themes namely ‘individuals’, ‘teams’, ‘mission’, and ‘reputation’. The success of an organization cannot be viewed as a separate entity away from the individuals who constitute it. Researchers in the recent past have recognized the importance of individuals in the performance of any organization [24, 25]. During an emergency like a pandemic, it is imperative that every individual in the group should contribute effectively regardless of whether it is a crisis or strategic management [13].

Concurrently, individuals should also work in teams for prudent allocation of the healthcare workforce and judicious utilization of resources during unprecedented challenges [26]. It is well known that all members can individually and collectively participate in developing innovative solutions for complex problems [27]. Usually, individuals working in teams choose to adopt ingenious behaviors that may result in enhanced performance, by displaying extra-role behavior, citizenship behavior, social exchange, and reciprocation [26].

The mission of a medical school or health care organization serves as the fundamental philosophy that guides all its activities including patient care, research, education, and health promotion [28]. The core elements of the mission become a crucial component of an organization, and eventually manifest as an effective branding tool. The success of educational institutions is assured when their daily existence and

culture are in alignment with their organizational values and mission [29]. It also reflects their culture, good practices, and precise decision-making while handling an extraordinary situation [30].

Reputation is defined as collective beliefs, views, opinions, anticipation, and cognition about an organization [31]. Organized and timely responses in change management add value to the judgments about an institutions' trustworthiness and reliability built over a period of time [32]. Therefore, how an institute responds to a challenge or catastrophe will have significant consequences on its reputation, regionally and globally. In summary the dynamics between the individuals, teams, institutional mission and reputation, influence the actions and outcomes of an institution.

Value of team support in Crisis

The current study results confirm the value of the team on either pole. It is considered one of the important tension areas to consider either in the tactical or strategic modes. King G (2002) suggests that corporations should have well-organized crisis management teams that are capable of responding collectively during a crisis [33]. As suggested by medical educators who participated in the FGD, King emphasized that an institution should have proper guidelines and procedures for communication to effectively manage crises. In agreement with the findings of this research, effective communication between teams allows facilitation and exchanging ideas among diverse departments.

Sommer et al. (2016) highlighted another critical area that markedly affects the outcomes of teams during a crisis which is the leadership style in an organization [34]. Transformational leadership seems to be associated with better performance while inverse effects were found to be associated with passive leadership.

In healthcare, Rice (2014) proves that successful teams can solve challenges in sophisticated organizations such as healthcare as the success of teams and teamwork can lead to better outcomes for patients and staff [35].

Clarity of Mission

The mission statement is recognized as an effective tool for regulating and guiding the organization. The importance of mission clarity roots in goal-setting theory [36] which explains that when employees understand the institutional goals, they are more motivated to perform better. Moreover, they need to understand how their work may contribute to the overall institutional mission [37].

It brings in a sense of belonging, motivation, and inspiration among employees [38]. Additionally, the clarity of the mission will reflect transparency that may invest in the public view of the institution [39]. It also serves as an instrument of communication for stakeholders [40].

Kim et al. (2020) provided evidence regarding the effect of the strategic alignment in the form of clarity of goals and process and their significantly positive relationship with employee's engagement and in turn the organization's performance and sustainability [41]. Another study proposes that organizations should possess insightful vision and mission statements for achieving strategic goals [30].

Project Indicators

In the current study and based on the data analysis, one of the most prominent warning signs that the polarity is not leveraged and that teams are not functioning their best is the delay in project indicator achievements.

Project success has two integral components, which are management success and product success [42]. The success of project management is closely directed to the process of project management, in relation to time, cost, and quality. In other words, these three dimensions reflect what is called 'efficiency of project execution' [43]. Product success is closely directed to the accomplishment of projects outputs or end products as proposed in the project plan [43].

Product success which reflects the success of the achievement of project deliverables and outputs could be considered the success of the project plan or strategy. The indicators for strategy success should include measures that reflect and relate to project outputs. These indicators or measures are related to the project outputs' deliverable itself for example its alignment to goals, beliefs, and satisfaction [44]

Comparing public universities and private universities

In this study, the comparison between private school scores and the whole cohort of respondents showed that private schools had higher scores in all tension areas but still showed the least score for the "teams" tension.

Comparing private school scores also showed that elements of risk in the whole cohort like the clarity of the mission, the capacity of teams to perform due to lack of resources, and team fatigue and exhaustion were not risky within the private school scores. This is in agreement with many studies comparing capacities to adapt within higher education systems. The augmentation of the digital infrastructure would benefit more blended learning which in turn facilitates online mobility for students and faculty [45].

When public schools were considered the baseline and compared to the rest of the cohort, it was clear that there was no increase in the overall scores of each tension area but there were elements that showed a degree of risk compared to the main cohort. These elements include:

· International partnerships that are built on confidence in the school to adapt

This is mostly due to the long chain of command in public universities. Public universities usually adopt the “Traditional Hierarchy” or “Hierarchical Structure”. This model supports bureaucracy from top to bottom. The people at the top control the better brains at the bottom resulting in dissatisfaction of lower employees [46].

This is in agreement with the findings of the international UNESCO study conducted post-COVID which demonstrated that half of the partnerships were affected or weakened by COVID19 [45].

· Faculty and student satisfaction with the response of the university to their emergent needs and training

The presence of unmet training needs for faculty and students is especially a finding that haunts public universities with a higher student load and lower capacity to adapt timely to the needs. This is in accordance with the same UNESCO study [45]

· The capacity to attract international students

This was highlighted as a risky area for public universities. This finding acknowledges the fact that there existed little or in-school adapted contingency plans for student mobility issues [45].

· The capacity to save time and effort and arrested productivity and loss of direction due to the coexistence of parallel teams without clear job descriptions

The presence of parallel teams with the same job description is an element of failure in planning and execution. This usually happens in large institutions that have extensive structures. This duplication tends to happen in times of crisis [47]. It usually results in a waste of time and effort that results in fatigue and loss of drive in the workplace. The same hierarchy allows for a large amount of bureaucracy. This is the obstacle that faces public universities when trying to adopt practices that save time and effort [46].

Recommendations

The results of this study identify a need to involve teams in extensive preparation for crisis management in anticipation of future crises. Several action steps need to be taken by institutions to maintain the upside of both poles when they are preparing for or anticipating the educational crisis (Table 2). There are also identified indicators that raise flags for institutions when preparing for anticipated crises (Table 3). It is recommended that institutions maintain close observation of these indicators and incorporate them in their strategy’s tested indicators.

Conclusions

Using the (PACT)^{TM} model for polarity mapping allows for a novel view of decision-making during a crisis. Managing educational crises needs to be approached as polarity rather than either/or decision-making process. In order to be able to accomplish this, it is recommended to engage in a mapping process and anticipate warning signs attributed to the over-focus on one of the poles. This work offers a guide for universities based on informed inputs of faculty and decision-makers to help with strategic decision-making during times of crisis. The focus of this work sheds light on the importance of taking all measures to communicate the mission and clarify it to internal and external stakeholders. It also draws attention to the importance of supports of team functions inside universities either by enhancing resources or utilizing time and effort-saving strategies. These are the priority strategies that need to be deployed during times of crisis.

Declarations

Ethics approval and consent to participate.

Ethics approval was obtained from Ain Shams University Research Ethics committee. The consent number is (R 01/2021). An informed oral/ written consent was obtained from all the participants.

Consent for publication

All authors have read and given consent for publication of this manuscript.

Availability of data and materials.

The materials are video recordings and survey

"Model for Guiding Medical School Strategy during Crisis Using (PACT)™ a Cross Sectional Qualitative Study", Data set are available at Harvard Dataverse.

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Authors' contributions

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Tables

Table (1): Comparison between assessment scores of Private universities and Public Universities

Map/ Area	Assessment item	Public university score with degree of risk (Risky)	Private University score with degree of risk (Good)	Collective cohort score and degree of risk
Individuals	Students are trained better on emergent (new) skills and Teaching becomes more targeted and less redundant	60	70	66 (Good)
Reputation	Our faculty are satisfied with the education process that incorporates their emergent needs	50	79	65 (Good)
Individuals	Faculty are trained better on emergent (new) skills and Teaching becomes more targeted and less redundant	58	76	64 (Good)
Reputation	We no longer attract sufficient numbers of international students due to failure to find solutions to problems like travel etc.	60	75	63 (Good)
Teams	Our teams demonstrate arrested productivity and loss of direction due to coexistence of parallel teams without clear job descriptions	59	75	63 (Good)
Individuals	We experience lack of progress in areas like conventional faculty development	59	77	63 (Good)
Teams	We increase productivity by saving team resources like time	55	65	62 (Good)
Individuals	Our faculty appreciate how our strategic orientation contributes to the relaxed learning environment	56	73	61 (Good)
Individuals	Our students appreciate how our strategic orientation contributes to the relaxed learning environment	54	74	61 (Good)
Reputation	Our international partnerships and relations thrive built upon new avenues of joint problem solving and increase confidence of the community in the capacity of the university to adapt	55	70	60 (Good)
Mission	Lack of clarity makes results in chaotic ad Hoc decisions and adopting untested educational choices	55	70	57 (Risky)
Teams	Our teams demonstrate fatigue and exhaustion due to depletion of time and effort in non-achieving initiatives	52	66	56 (Risky)
Teams	Our teams struggle to complete assigned tasks due to depletion of team resources	50	67	55 (Risky)

Table (2): Action steps required to maintain upside of each pole in the tested polarity (Tactical and Strategic response)

Theme	Action steps needed to maintain the upside of tactical (crisis) response	Action steps needed to maintain the upside of strategic response
Reputation	1. Assign a budget for the deployment of a crisis management plan 2. Develop and manage a communication plan with stakeholders to engage and orient them of how the tactical decisions feed into the strategy. 3. Design long term plans to face similar crises in future 4. Pursue government support for innovative solutions 5. Design and develop Human resource training with CPD / CME points 6. Monitor guidelines/standards during crisis	1. Modify the recruitment policy of faculty and administration. 2. Develop and manage a communication plan with stakeholders. 3. Conduct international events 4. Offer adaptable new services to help in crisis management and improve the long-term plan 5. Document the activities and achievements 6. Design an alumni communication plan 7. Prepare graduates for the licensing exam training 8. Postgraduate training plans to bridge the gap to community and market needs 9. Get feedback (annual survey) from the stakeholders (employers)
Teams	1. Audit on team functions 2. Capacity building of teams (e.g. etiquette, soft skills.) 3. Communicate experience and unique solutions to the internal stakeholders regularly 4. Revise team structure (homogenous and complementary) 5. Address grievance through a plan for faculty and student support 6. Publish unique experiences 7. Encourage innovative solutions and projects*	1. Communicate a clear and detailed plan for all the people involved. 2. Audit on team functions 3. Offer appreciation and incentives 4. Facilitate the communication through development of a suitable platform. 5. Use of interactive and integrative activities (e.g. team building activities etc.).
Mission	1. Develop multidisciplinary teams 2. Develop and implement a communication strategy 3. Testing and adapting infrastructure and tools (e.g., internet, proctoring system, LMS etc.)	1. Incorporate the change to the system. 2. Self-audit (evaluation of process and outcomes)

	4. Reform of bylaws to accommodate innovative teaching and assessment methods 5. HR development of IT department 6. Development of new jobs based on requirements /responsibilities	3. Revisit mission regularly for modifications 4. Creating a risk management unit 5. Empower the quality assurance unit 6. Communicate with alumni for the aim of institutional evaluation 7. establish specialized units according to current needs 8. Investing in infrastructure to adapt to emerging needs
Individuals	1. Renovation and update of existing platforms 2. Revise and update infrastructure to suit the requirements of the crisis 3. Establish updated human resource development plans 4. Continuous monitoring of educational practices (teaching and assessment) 5. Establish inter-departmental agreements and partnerships for improved communication and execution of innovative education activities	1. Student and faculty orientation about changes, decisions 2. Student training to adapt to changes 3. Faculty development to adapt to changes 4. Involve students and faculty in strategy implementation 5. Revisit the curriculum regularly considering the lessons learned (new teaching and assessment methods) 6. To ensure graduate competency, institutionalize new alternatives for student competency training 7. Offer psychological support for the students and faculty. 8. Monitor student attendance, engagement, and motivation

Table (3): Warning signs indicating institutions are getting the downside of each pole in the tested polarity (Tactical and Strategic response)

Theme	Warning signs indicating institutions are getting the downside of tactical (crisis) response	Warning signs indicating institutions are getting the downside of strategic response
Reputation	1. Arrest in collaboration projects that started before the crisis 2. Decreased numbers of citations of publications 3. Decrease in the numbers of publications within the research plan	1. Number of international students applying for the program reduces by 10% 2. Increase the dissatisfaction of enrolled students when asked about the innovative approach of the university 3. Decrease the number of faculty attending strategic management meetings 4. Verbal complaints from people in the local community identifying the school as outdated or detached
Teams	1. Decrease the number of faculty attending meetings* 2. Increase the number of complaints from team members* 3. Delayed submission of assigned teaching tasks*	1. Increase burnout score by 20%* 2. Increase in the number of sick leave* 3. Delay in accomplishment of team deliverables* 4. Decrease in numbers of team meetings by 30%* 5. Stress in department meetings and quarrels arising over minor issues* 6. Increase conflict numbers and frequency. *
Mission	1. Increase the resource consumption by 30%* 2. Inferior quality Reports / conflicting reports* 3. Delay in achieving strategic deliverables* 4. Decrease satisfaction of community members in community service offered by the university* 5. Different conflicting decisions, opinions, or instructions*	1. Increase the resource consumption by 20%* 2. Hearing negative feedback comments from stakeholders: reference to the detachment of the institution from reality 3. Decrease in the number of stakeholders attending conventional meetings* 4. Less students know about the vision* 5. Low academic achievement in module exams 6. Decrease satisfaction among stakeholders with our mission
Individuals	1. Decrease in student engagement by 20% 2. Failure to achieve more than 10% of learning outcomes as compared to the previous academic year	1. Decrease of student academic performance in comparison to the last year by 20% 2. Decrease of student and faculty satisfaction (school, environment….) in comparison to the last year by 30%

	3. Decrease of student academic performance in comparison to the last year by 30% 4. Decrease student attendance by 25% in comparison to before the crisis 5. Decrease percentage of participation of students in extracurricular activities by 30% 6. Increase in numbers of student and faculty medical consultations by 20% 7. More international students miss examinations 8. Decrease student engagement and motivation by 30% 9. - Negative verbal Student's feedback 10. Increase in numbers of student and faculty medical consultations by 20% 11. Decrease staff participation in crisis management activities by 20 % 12. Negative faculty feedback 13. Decrease in faculty satisfaction 14. Decrease the number of publications	3. Decrease level of motivation score by 30% 4. Student feedback shows more entries of complaint in the open-ended section 5. Decrease student attendance by 25% in comparison to before the crisis 6. Decrease percentage of participation of students in extracurricular activities by 30% 7. Increase in numbers of student and faculty medical consultations by 20% 8. More international students miss examinations 9. Decrease student engagement and motivation by 30%

**Priority warning signs as per the assessment results*

Figures

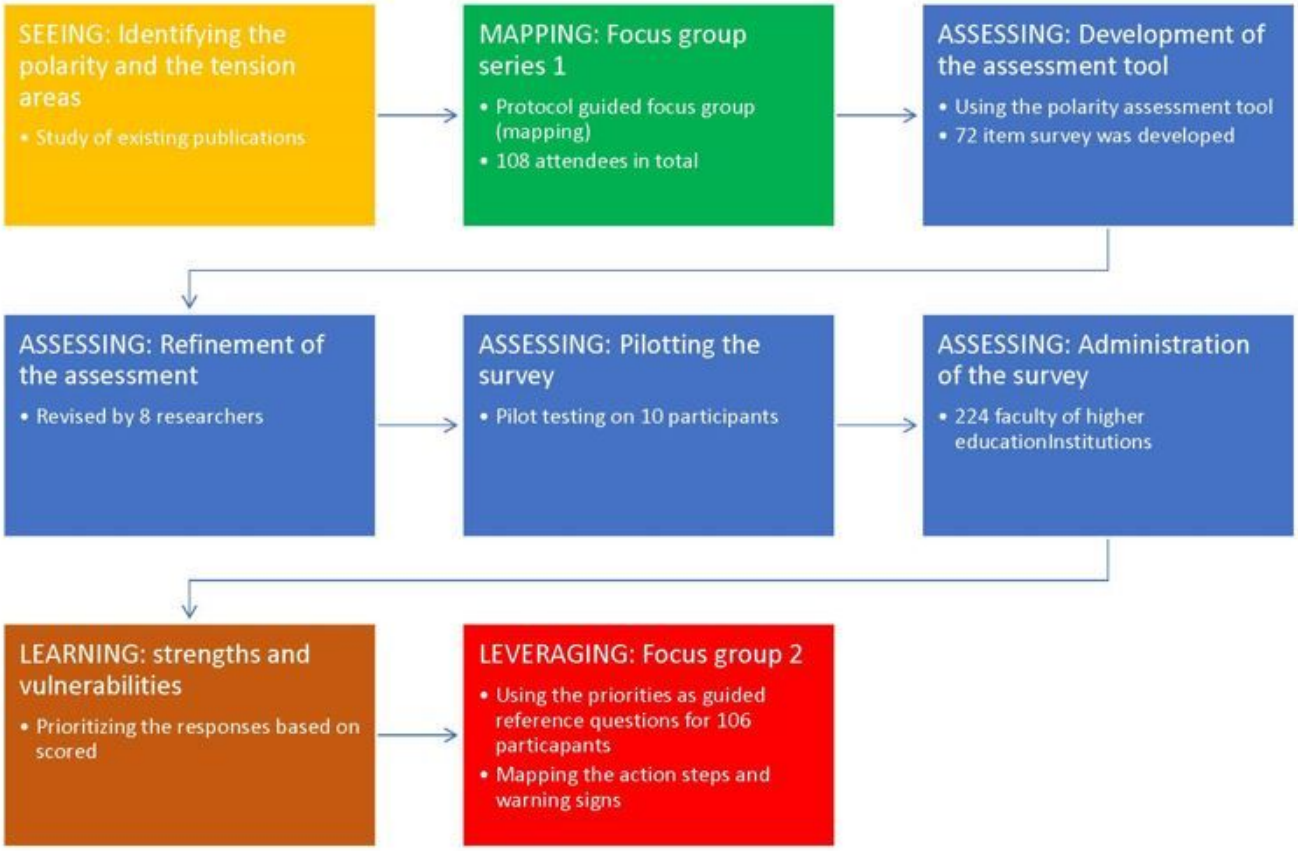
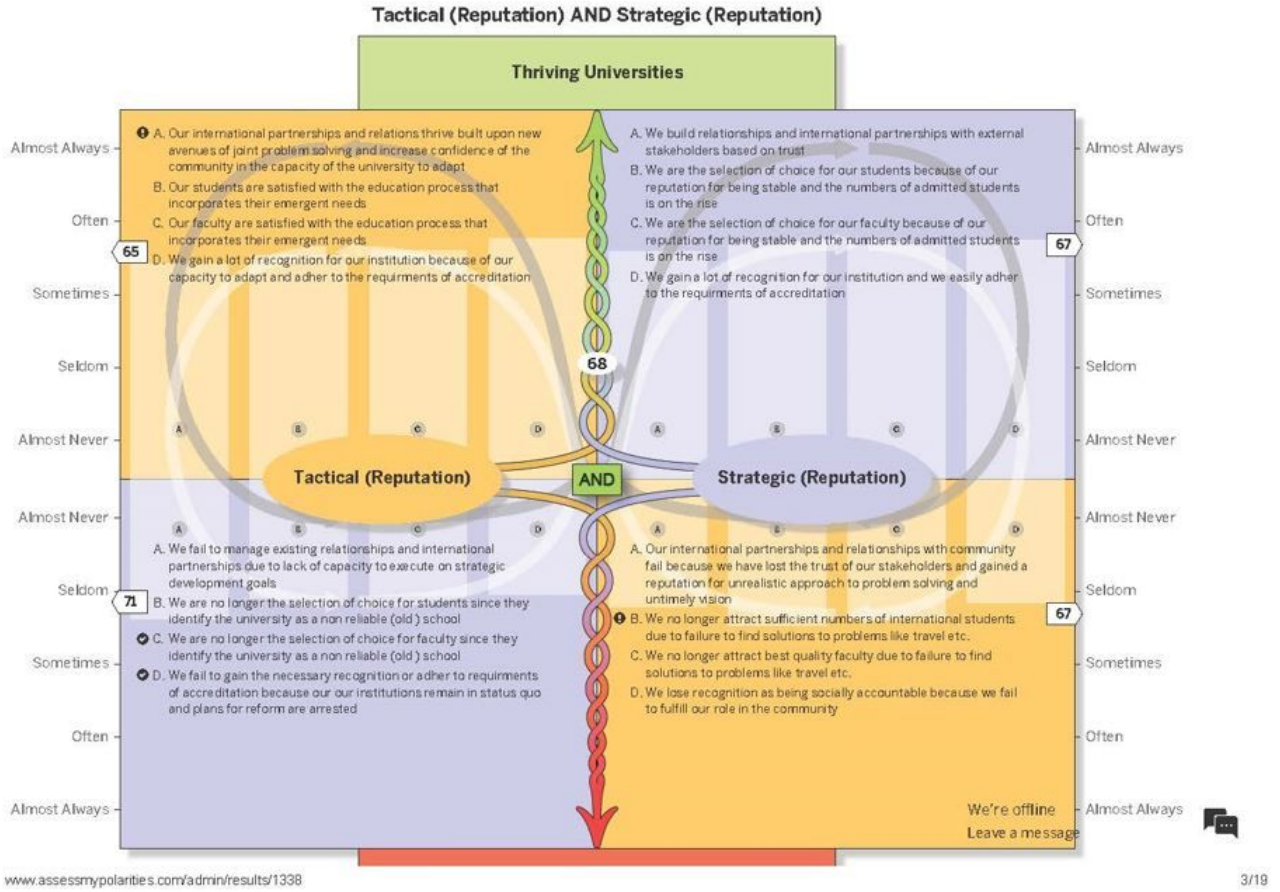


Figure 1

Flow chart showing study design and steps of implementation

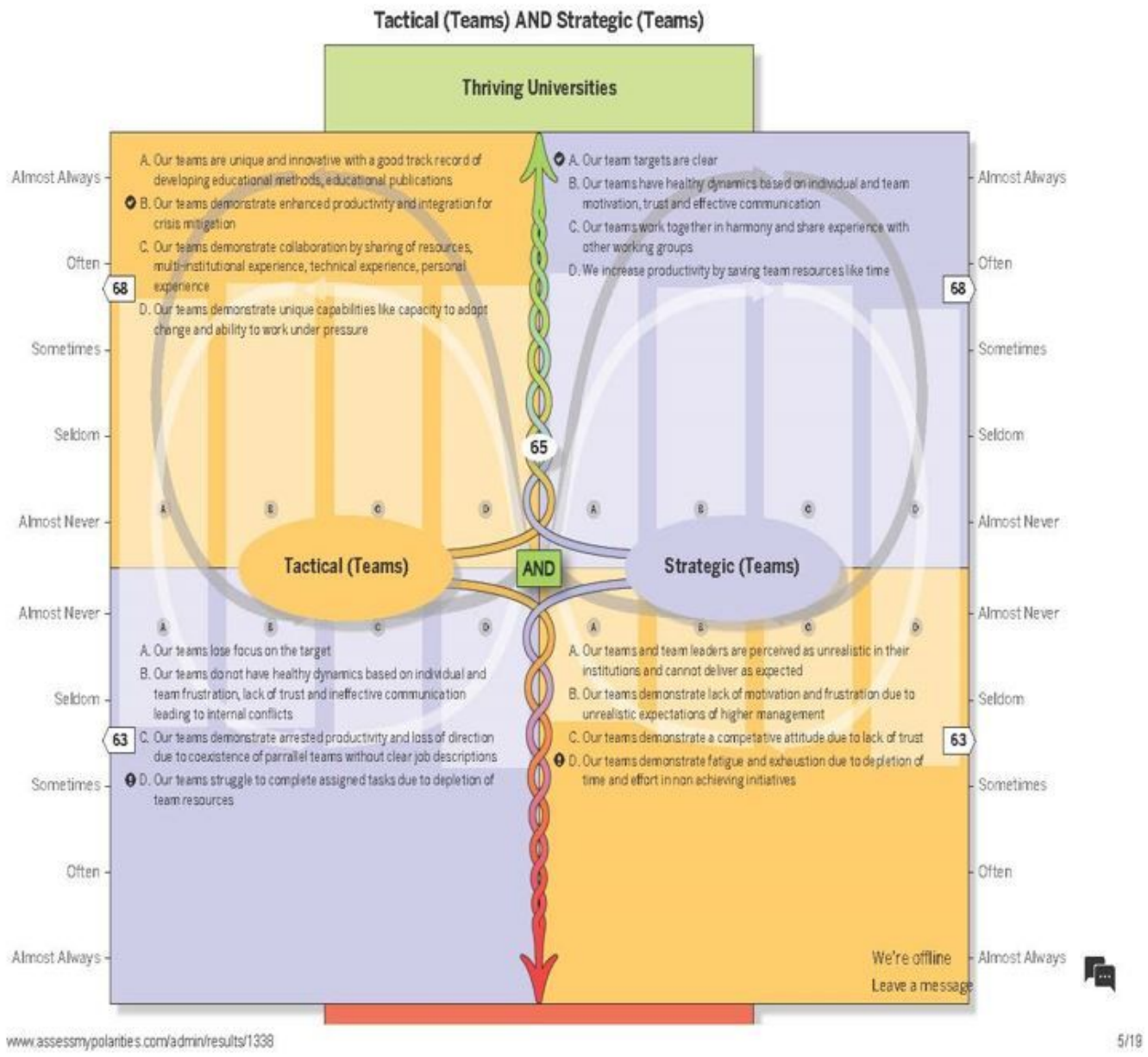


STRENGTHS: The highest scoring items in this Polarity

VULNERABILITY: The lowest scoring items in this Polarity

Figure 2

Mapping of the tension; University reputation



STRENGTHS: The highest scoring items in this Polarity

VULNERABILITY: The lowest scoring items in this Polarity

Figure 3

Mapping of the tension; Teams

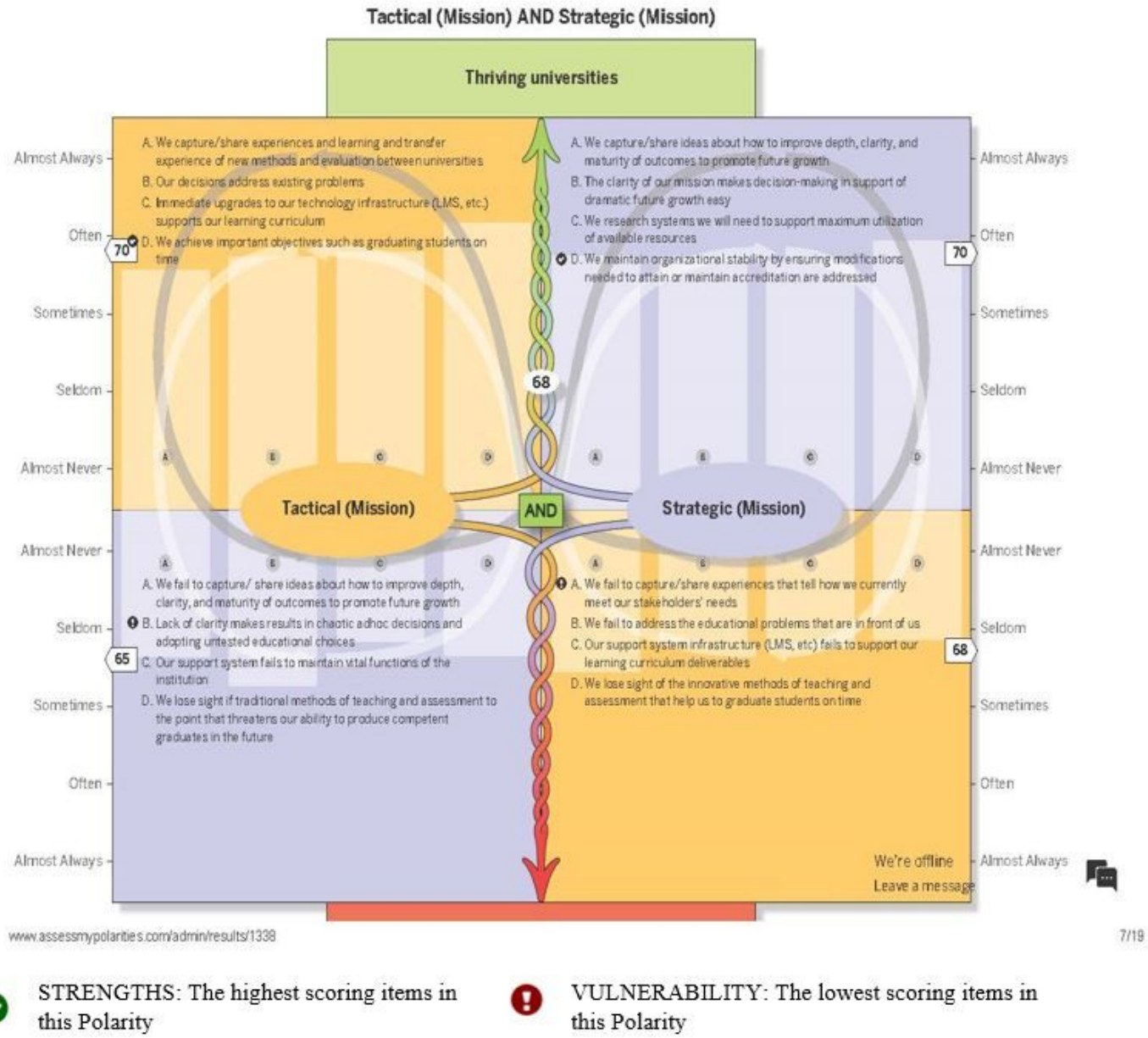
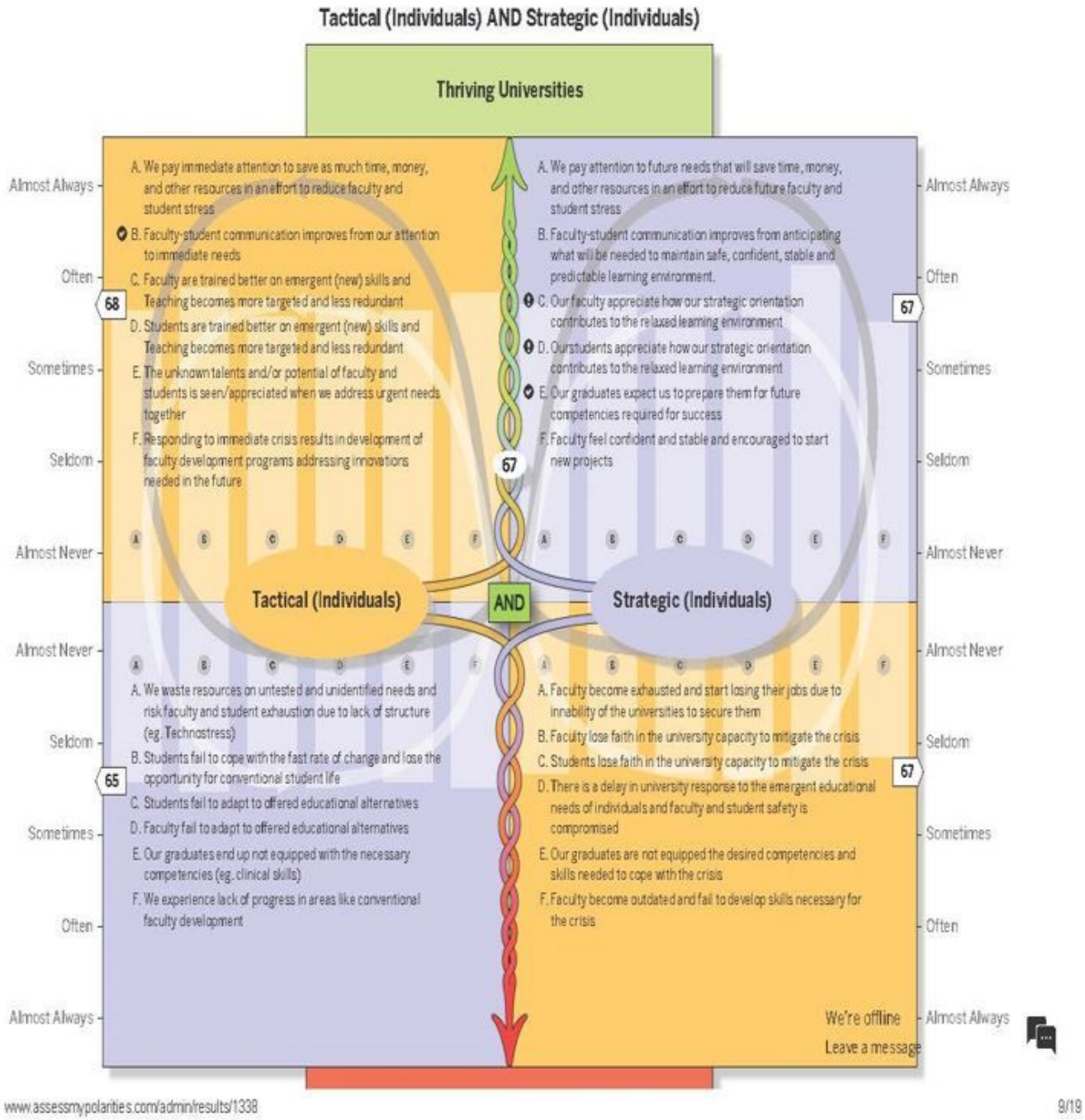


Figure 4

Mapping of the tension; University mission



STRENGTHS: The highest scoring items in this Polarity

VULNERABILITY: The lowest scoring items in this Polarity

Figure 5

Mapping of the tension; Individuals

Figure 6

Overall mapping of the four tension areas