Dilemmas and Improvement Paths of Emergency Management Capacity in Colleges and Universities: An Analysis Based on the 4R Model

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Abstract: *As higher education has entered the era of universalization, there is an increasing prominence of the conflict between the frequent occurrence of emergencies in colleges and universities and their lack of emergency management capability. On the basis of analyzing the 4R crisis management theory, we systematically analyzed the operational dilemmas of emergency management in colleges and universities from the four links (reduction, readiness, response, and recovery), which finds out that the dilemma of emergency management in colleges and universities lies not just with one weak link, but with the poor transmission mechanism among the four links like the obstruction of drill feedback for triggering the revision of emergency plans and the lag in feeding review conclusions back to the front-end links etc., accordingly, this paper put forward a capacity improvement path by optimizing the transmission nodes.*

Keywords: *emergency management in colleges and universities; 4R crisis management theory; emergency management capacity*

Introduction

Higher education is entering the era of universalization. The frequency and intensity of emergencies occurred on campuses and universities keep increasing along with diversity of types. Usually they become public issues in several hours since they emerge from campus incidents which seriously challenge the teaching order, safety of teachers and students, and organization's reputation. Compared to general government emergency management, there exist many contextual constraints for college/university emergency management: The population being managed is at a critical stage of psychological development involving high emotion and prominent social sensitivity; Organizational structure has dualities between relatively closed and high social attention; Triggers of emergencies are diversified but evolution path is nonlinear. These all cause multiple difficulties facing emergency management in colleges and universities.

The emergency management system for colleges and universities (core: "one plan and three systems") has been basically established now. However, the possession of complete institution texts does not imply the possession of governance capacity. How come we find emergency management in colleges and universities being passive and reactive while the institutional frameworks are getting better and better? Some scattered explanations from existing researches – insufficient operability of emergency plans; unsound organizational system; weak legal foundation...but all focus on the defects at individual links without looking into the relationship between the links or the underlying logic of overall system failure. Based upon the 4R crisis management theory, this paper tries to answer it.

Handling capacity for emergencies means the handling capacity with which, responding to emergencies, management entities will take corresponding measures throughout the whole process of pre-event prevention, incident response, in-process handling, and post-event recovery, thus "to effectively curb the emergence of crises and keep the consequences within a reasonable and tolerable range". Emergency management capacity in colleges and universities refers to the comprehensive capacity that colleges and universities should possess when dealing with emergencies and doing daily emergency management work considering the characteristics of university campuses[1] and which can be further decomposed into four aspects: prevention capacity before the occurrence of emergencies, handling capacity during their occurrence, recovery capacity after their occurrence, and support capacity running through the entire process[2]. We see from its definition that emergency management

capacity is not only a single technical index of any one link, it's a system capacity including the whole life cycle of emergency management; the level of emergency management capacity does not depend solely on the completeness of each link itself, but more importantly, the connections between them and circulations among them.

1. Theoretical Foundation and Analytical Framework

The crisis management theory is proposed by a US crisis management expert named Robert Heath in his book Crisis Management. This has four stages which are called as Reduction (Reduction) , Readiness (Readiness), Response (Response), and Recovery (Recovery). Each of them: Reduction aims at reducing the possibility for crisis occurrence by managing the environment, structure, systems, and personnel; Readiness aims at pre-crisis early warning, emergency plans, and capacity preparation; Response aims at rapidly responding and handling if crisis happens; Recovery aims at recovering order after crises happen and summarizing experiences[3].

Main contribution of the 4R crisis management theory can be found as: transforming emergency management from the passive response after a crisis happens to full-cycle management activities embedded in the daily operation of an organization, showing the interdependent relationship between the four links (Reduction provides risk information for Readiness; Readiness provides institutional tools for Response; Effectiveness of Response depends on the adequate preparation of the first two links; Value of Recovery feeds experience back to the front-end links forming closed-loop iteration), any rupture of a link will transmit level by level eventually leading to attenuation of overall system effectiveness. The 4R model is very applicable to analyze emergency management in colleges and universities. Colleges and universities with clear organizational boundaries and management cycles have emergency management activities divided into several stages along the temporal dimension allowing us to diagnose problems accurately. Most importantly, the 4R model highlights the "transmission mechanism" corresponding exactly to an analytical dimension often overlooked when we study emergency management in colleges and universities – problems rarely happen isolated in one link but run through the whole event process like a chain.

2. Practical Dilemmas of Emergency Management Capacity in Colleges and Universities

From the practice of emergency management in colleges and universities, we can see that there are no separate failures for this four links, they have a chain mechanism of sequential rupture and level by level transmission: risk identification is inadequate with accumulated hidden dangers; emergency plans lack precision making prevention and control just a formalities; response is not smooth with limited emergency resources being used inefficiently; post-event summarization is insufficient resulting in inability to consolidate response and handling experience as capacity. We must systemically analyze the practical dilemmas of emergency management capacity in colleges and universities.

2.1 Weakening of Risk Perception

The purpose of Reduction is reducing the probability of crisis occurrence and potential damage through two conditions: The ability to perceive risks and Translation of perceived risks into action. There are systemic problems with both premises in colleges and universities. In terms of risk perception, there is a general lack of concepts and cognitive biases about emergency management in colleges and universities, mainly manifested in: Lack of crisis and disaster awareness, not being vigilant during periods of peace; lack of understanding of the importance of emergency management; Believing that emergency management only occurs if crises happen[4]; Continuous occupation of managers' attention by their regular agenda like student enrollment, teaching evaluation, and research grant applications leading to degradation of risk screening into formalized routine inspections; Identification of hidden dangers according to personal experiences rather than systematic methods; Scatter of risk information among various departments such as security, logistics, and student affairs without institutionalized channels for integration and assessment. Moreover, because of the management philosophy dominated by administrative power, colleges and universities focus on "handling efficiency" in the process of handling emergencies and try to complete incident handling in a short time[5], while risk prevention, whose effect is difficult to quantify and difficult to achieve visible performance in the short term, has been relegated to the bottom of resource allocation and attention allocation over the years. Weakening of the prevention function within institutions is an inevitable

result of this value ranking.

2.2 Formalization of Emergency Plans

Readiness refers to the completion of institutional preparation, capacity building, and reserves before the arrival of crises. However, the development of Readiness in colleges and universities usually encounters a formalistic dilemma. In the link of formulating an emergency plan, although the coverage of the "one plan and three systems" framework in institutions is relatively complete, it is very prominent that the emergency plans of most colleges and universities are highly similar, and most emergency plans are quickly completed within a short period under the pressure of administrative orders without going through strict procedures (e.g., investigation, analysis, training, drills, and refinement) leading to poor operability[6]. After further analysis, we find there are two paths of dependence: on the one hand, upward imitation, copying the frameworks and provisions of documents issued by higher-level authorities; on the other hand, experience domination based on managers' personal experiences rather than systematic assessment. The common defect for both paths lies in that the content of emergency plans only stays at the level of statements of principle with no procedural provisions pointing out specific operations. When managers realize that emergency plans are "unusable", institutional texts will degenerate from "action tools" to "compliance materials".

On the link of emergency drills: some colleges and universities fix scripts beforehand and evade uncertain variables in emergency drills with a purpose of "demonstrating capacity", not exposure deficiencies; ritualized drills prevent organizations from testing their emergency plans or coordinating teams as well as exposing shortcomings. Worse yet, there's no systematic record of problems afterwards, let alone problem-driven revision of emergency plans – the value of drills stays on the scene but doesn't become an institutional update.

In terms of capacity reserves at the level of capacity reserves, there are no permanent emergency management bodies among most colleges and universities; they generally form ad hoc working groups composed by the university leader in charge, functional departments such as security office or student affairs office and colleges and departments involved during an emergency. The ad hoc organization lacks good continuity and has many problems on coordinated handling[7]. At the same time, the deficiency of systematic emergency management education and training is another shortcoming in capacity reserves. Compared with the current situation that the emergency management education system of some colleges and universities is not yet sound and regular training is relatively weak, American colleges and universities have formed a relatively mature emergency management education system including course content, course implementation methods and resource support[8]. Lack of education and training makes it hard for colleges and universities to transform scattered experience into sustainable professional capacity. Moreover, the general shortage of professional psychological intervention forces causes colleges and universities to be lacking response resources when facing group psychological crisis.

2.3 Bureaucratic Constraints in the Response Stage

The response will also suffer from the first two links unless Reduction provides sufficient risk assessment or Readiness offers reliable institutional tools. Thus, there exist two deep constraints in terms of the level of organization's operation that Response suffers from. Firstly, there is a deep contradiction between bureaucracy system and unconventional tasks. The daily management of college and university follows the logic of the bureaucratic system which has clear division, different hierarchy, standardization. It brings great efficiency advantage normally, yet when confronted with the conventional challenge of emergencies, fragmentation among vertical and horizontal lines become departmental barriers: security, student affairs, logistics, and publicity all work separately without any cross-department channel for sharing situational awareness and quick coordination; hierarchical transmission is elongated under time pressure, the process where frontline staff waiting for decision-making instructions constantly wastes valuable handling windows. No regular cross-department cooperation training for ad hoc emergency command center, they have to start building collaboration relations under pressure while crises never spare the time for starting from scratch. Secondly, it involves mechanism failure of information communication. Some colleges and universities emphasize internal communication instead of external communication during crisis communication, focusing on information transmission within the administrative system internally but lacks institutionalized media communication mechanisms externally. This imbalance leads to double-folded consequences: firstly, information attenuation happens level by level through the

bureaucratic chain so that decision-makers can't get the true on-site situation; Secondly, when facing the media and the public, managers always stay silent out of lack of clear communication protocol, and the information vacuum is instantly filled up by rumors and emotional interpretation, and secondary public opinion interferes with the handling process.

2.4 Disruption of Organizational Learning in the Recovery Link

The aim of recovery is to enable learning and improving during crises, yet the practice of recovery in colleges and universities focuses only on "order restoration", rather than "capacity improvement". When the crisis subsides, the external pressure plunges university administrators into the urgency of "having to give an explanation as soon as possible", accountability procedures are started immediately. If the goal of post-event work is accountability, then the focus shifts from "diagnosis of institutional deficiencies" to "pinpointing individual responsibility". In fear of accountability, people conceal information and avoid responsibility, while actual institutional deficiencies remain hidden. From the closure reports after every crisis it can be seen that "the responsible persons have been dealt with,", systematic mechanistic problems still remain untouched until another crisis arises. Furthermore, the gap in psychological reconstruction at institutions is also very important. With the surge in the number of college students recently, increasing employment pressure and intensifying social competition, emergencies caused by psychological factors often happen. Government, colleges and universities, and society begin to think about and pay attention to the psychological state of teachers and students, take measures such as increasing funding for psychological intervention and set up psychological counseling rooms. Most colleges and universities do not have any specialized body responsible for campus crisis psychological intervention work, the personnel involved in specialized psychological intervention has a relatively low degree of professionalization, the budget for crisis psychological intervention is relatively small, and psychological prevention does not cover all teachers and students[9].

2.5 Obstacles in the Transmission Chain

Ideal 4R model is a circulation of information: Reduction circulate risk data to Readiness; Readiness provide institutional tools to Response; practical performance of Response provide analytical materials for Recovery; Recovery feed experience back to the Reduction and Readiness links, which leads to another iteration of improvements. There are ruptures on every interface of this circulation in the practice of some colleges and universities. Different parts of the system may be complete by its document but they don't have effective connection between them and can't work as an organic whole. Emergency management in colleges and universities still remains at the level of passive and reactive response and doesn't have a channel transforming single response experience into sustainable capacity.

3. Improvement Paths for Emergency Management Capacity in Colleges and Universities

3.1 Establishing a Binding Mechanism for Inputting Risk Information into Emergency Plans

Firstly, colleges and universities should conduct risk screening and vulnerability assessment based on themselves when drafting or revising the emergency plan: write a written risk assessment report attached with the emergency plan text that needs to be approved. The high probability and high harm events described by the risk assessment checklist correspond to the special handling plans in the emergency plan. There will be no formulation or revision of the emergency plan without risk assessment report. Risk assessment is not unidirectional and linear; it's cyclic and iterative. When emergencies happen or there are any changes in the campus environment, colleges and universities need to do new risk assessments and promptly revise the emergency plans so as to keep the best response effect[10], transforming the risk assessment from an "optional item" into a "necessary prerequisite", fundamentally changing the power relationship between risk information and emergency plan formulation. Secondly, after the end of the emergency drill, we need to submit an assessment report within a certain period of time which includes deviation between the content of the emergency plan and the actual situation, obstacles in the coordination process, and gap in resource allocation. For each problem in the assessment report, there is a specific revision opinion, and the revised version of the emergency plan and the assessment report must be archived together, making a traceable "drill—assessment—revision" archive.

3.2 Establishing an Institutionalized Channel for Feeding Review Conclusions Back to the Front-End Links

Firstly, we need a diagnosis instead of accountability orientation. After a crisis, our investigation conclusions should separate "institutional deficiencies and mechanistic factors at the systemic level" from "individual responsibility" by distinguishing between them in the report format. It cuts off the chain of fear that "participants will be held accountable if they tell the truth". Secondly, there is a hard link between the conclusion of assessments and the front-end links. Our review outputs cannot end up with the textualization of "suggestions", but it should directly lead institutional response in the front-end links: any defect regarding emergency plans shall automatically start revision procedure; any deficiency on training must be included in the next year's training plan; any material gap or risk blind spot must adjust assessment standards or reserve allocation. In order to achieve this "hard connection", we can set the implementation of risk assessment conclusions as an indicator in the assessment of emergency management work in colleges and universities for the next year.

3.3 Rule-of-Law Guarantee: The Institutional Foundation for Sustained Circulation

Rule of law is the premise of emergency management in colleges and universities. Currently, the rule-of-law dilemma faced by emergency management in colleges and universities lies in: lack of provisions about the specific situation of colleges and universities at the higher levels of laws, lower degree of legal effect of the internal regulations, and blurriness of the boundary between authority and responsibility in emergency handling. This results from both sides leading to not having procedural constraints when making decisions during emergencies increasing the risks of non-standard exercise of power, while causing passive action by frontline personnel concerned about post-event accountability, missing handling windows. Colleges and universities should focus on comprehensive sorting out the risk points of campuses under the basis of laws and regulations (such as the National Overall Emergency Plan for Public Emergencies and the Emergency Plan for Public Emergencies in the Education System) and according to their own actual conditions, formulate and improve their overall emergency plans, various special emergency plans and on-site handling plans in accordance with the law.

4. Conclusion

From our analysis using the 4R crisis management theory, we find deep-rooted causes of dilemmas in emergency management in colleges and universities: Without Reduction, risks pile up unobserved; Hollowing out of Readiness fails to meet prevention and control needs by institutional tools; Disorder of Response consumes limited capacity inefficiently; Vacuum of Recovery deprives them of the only channel for learning and iterative improvement. Four links work separately yet isolated, it's complete but not connected. Our core proposition to strengthen emergency management capacity is to make mandatory connections among these links, elevating emergency management as an auxiliary function of the administrative system to a strategic issue of university governance, and further enhancing colleges' and universities' ability to learn lessons from crises turning experience into governance capacity.

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