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Looseness in School Organization as Bureaucracy: the School in the Context of Weber's Historical and Religious Sociology

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Abstract

Most studies of school organization assert that Weber's theory of bureaucracy which saw modern organization in terms of a machine model is difficult to apply to the analysis of schools, and that the school has a non-bureaucratic character. This assertion has its theoretical basis in the various kinds of looseness which are peculiar to school, such as "structural looseness" and "loose coupling". Looseness in the school organization is seen as incompatible with the bureaucratic attributes of the organization which was formulated theoretically by Weber as the ideal type. But through close examination of Weber's theory of bureaucracy with reference to his historical and religious sociology, it becomes clear that the school and the machine have the following common characteristics: the machine and modern organizations are products of the modern technology of purification which keeps them rational. This makes the looseness inevitable to the machine and the organization in two ways. Firstly, to cope with various irrational impacts from inside and outside, both machine and organization install a shock absorber which inevitably brings about looseness. Secondly, to control the irrational subjects, a feed back control system is introduced and this system affords some degree of autonomy and looseness. Looseness is not peculiar to the school. It is a common characteristic of all sophisticated machines and modern rationalized organizations. The existence of looseness in school organization does not mean that the school organization is not bureaucratic. The looseness is structurally incorporated into the school as bureaucracy.

Key words: Weber, school organization, bureaucracy, looseness

Introduction

Organizational concern about the school began when many people became conscious of the teacher's professional autonomy. While most solo professions can enjoy autonomous activities fully in their daily work, professions which are included in the organization are always obliged to face organizational control and cannot gain full autonomy. Teachers were organizational beings, but when they began to be thought of as professionals, the school was realized as an idiosyncratic organization. Weber's theory of bureaucracy began to be applied to the school, and the conflict between bureaucratic control and professional autonomy became a main focus in school analysis (Corwin 1965; Lortie 1969; Anderson 1968; Katz 1968). In these studies, the school organization was thought of as a bureaucratic organization. Subsequently, some researchers posed questions about the applicability of Weber's theory of bureaucracy to the analysis of the school organization. Some totally denied the bureaucratic characteristics of the school organization and proposed other alternatives that see the school as a "de-bureaucratization" and a "loosely coupled system" (Bidwell 1965; Weick 1976). Although few researchers completely rejected the concept of bureaucracy, most researchers accepted its partial validates to analyze one aspect of the school. It seems that the rational model is only one perspective which would be accepted. For example, Tyler tried to synthesize the various approaches through using the concept of tightness and looseness. That is, he identified four main categories

of approaches to the school organization which are classifiable according to the tightness or looseness of the hypothesized linkages, first, between formal and informal elements of structure and, second, among the elements of formal structure themselves. These were loosely coupling models, formal organization theory, interpretive approaches, and structuralist approaches (Tyler 1988, pp. 12-24). Formal organization theory, though incorporating some differences, is seen as a typical Weberian model and is only one possible model. Looseness has become a key concept in disputing the effectiveness of formal organizational theory. Though the organizational analysis of the school began by using Weber's theory of bureaucracy, this rational model, which has often been referred to by using the metaphor of a factory or a machine, has failed to reach a central position in analysis of schools.

Although there are many reasons why the school is not seen as a rational organization, these reasons will converge upon the problem of irrationality. As the actual school has many irrationalities based on the various types of looseness, its formal structure does not coincide with the actual activities in the school organization. In the first place, from the functional perspective of school organization, it has been insisted that the teacher's professional autonomy distorted bureaucratic authority, and the structural looseness theory became popular (Bidwell 1965). In addition to this structural looseness, "loosely-coupled structure" and "decoupled system" have also been emphasized to understand the organizational characteristics of schools (Weick 1976; Meyer 1977). In the second place, the interactive study of school asserts that teacher-pupil negotiation will make the school more changeable and unpredictable and may increase the discrepancies between formal structure and actual activities (Woods 1983). The phenomenological perspective which sought primarily to describe the subjective meanings of human action also saw many variations of behavior in the life world of schools (Dale 1973). These mean that the school members' behavior has many discontinuities and looseness and becomes difficult to match with the formal structure. In the third place, from the structuralist perspective, it is seen that there are discrepancies between visible behavior and the invisible principles which control the surface phenomena. This also means that, on the one side, the structural principles may be tight, but on the other side, the visible behavior will display looseness (Tyler 1988, p. 154). If the bureaucratic elements are nothing but surface phenomena, they will not necessarily play a decisive role in school organization. It is thought in each case that looseness is connected closely with a variety of irrationalities.

Weber's theory of bureaucracy as an ideal type has been distinguished as including no such looseness or irrationality. It has also sometimes been referred to as a blueprint which is different from the real entity of the school. According to the ideal typical concept, the bureaucratic organization is very rational, because it has a higher degree of predictabilities and calculabilities of members' behavior. But it seems difficult to find such predictable and calculable behavior of students and teachers in the actual situation of school. It is easier to recognize indeterminacy and ambiguity in their behaviors. Clearly, there are many kinds of looseness or irrationality in the school organization. The validates of Weber's theory of bureaucracy seem to have many limitations for the analysis of the school. This inevitably leads to an emphasis on understanding the school as a non-bureaucratic or pre-bureaucratic organization.

In most of these approaches, the organization was typically defined as "social units that pursue specific goals" (Etzioni 1961, p. 5), and many factors which impede this goal-attainment were indicated. The theory of informal group (Blau 1956), and the dysfunction of organizational rules (Merton 1957), and the constant conflict in organization (Gouldner 1955), which show the irrational aspects of the actual organization, were pointed out as the defects of a formal model which was derived from Weber's concept of bureaucracy. After that, generally, organizational analysis in America had evaluated Weber's theory of bureaucracy as unrealistic, and many analysts of school organizations also criticize Weber's theory of bureaucracy as being a rational model which is not suitable for the analysis of the school, mainly because of the looseness which

is inherent in school organizations. The looseness became the most persuasive concept for denying the bureaucratic characteristic of school organization. But these critics show very superficial understanding of the looseness and are unable to explain the looseness itself. In a recent attractive paper, through a case study of the organizational history of the classroom system within public education in Philadelphia, Hogan criticized the theory of looseness. He pointed out the deficiencies of these theories in respect of their disregard for the existence and mixture of various kinds of control and power such as ideological control, performance-based controls, and normalized power, and sought a restoration of the Weberian model (Hogan 1990, pp. 276-277). But he did not explain the reason why the school has a loose aspect as a part of its organizational structure. What is the looseness? Is looseness really incompatible with the bureaucratic attributes of organization?

Certainly, Weber proposed the ideal typical concept of bureaucracy and emphasized legal-formal aspects of the organization, but he never ignored the irrationalities in the bureaucratic organization. Conversely, many critics of Weber's theory ignored his description of the irrationality of bureaucracy. When Weber described the ideal typical concept of bureaucracy, he apparently looked at the bureaucracy from a historical perspective. His fundamental sociological concerns were the explanation of the realization of rationalized modern Western societies, to which he referred as "disenchantment of the world (Entzauberung der Welt)" through the religious ethics of Protestantism (Weber 1989, p. 13). The analysis of the appearance of modern rationalized bureaucracy was one of these grand theoretical concerns. This means that the bureaucratic organization had changed from a more irrational one to the most rationalized one. In particular, this change was insisted upon in the analysis of both the charismatic and the legal domination.

Although Weber himself did not refer to school organizations such as elementary or secondary schools, he often spoke about university organization and analyzed it theoretically as a bureaucratic organization. In his famous lecture, "Science as a Vocation", he compared the German university with the American university, and stated that the latter was more rational and more bureaucratized than the former in some respects (Weber 1989, pp. 3-5). Undoubtedly his reference to the university as a bureaucratic organization also has important religious meanings. On the one hand, in this lecture when he criticized teachers who taught political opinions and behaved as prophets or demagogues, he referred to the charismatic characteristics of the German university. Since the Middle Ages German universities were under the influence of Catholicism which permitted "office charisma". On the other hand, he saw that more bureaucratized university organizations developed on the fertile soil of Protestantism in America. Weber considered that not only the university organization but also other modern organizations were products of religious activities. The American university is one example of these rationalized organizations. If this statement is correct, we are now required to see the emergence of the school as a product of religious activities. Further, if the modern rationalized bureaucracy was built by the Protestant ethic, we face a new challenge in verifying, from the sociological perspective of religion, whether or not the school organization is bureaucratic. In addition, the relationship between rational aspects and irrational aspects of schools will be clarified. Finally, the looseness which became the key concept for denying the bureaucratic characteristics of school organization will have to be unmasked. It seems that the critics who refused to accept the theory of bureaucratization to analyze schools were not concerned with these historical processes in the emergence of school organization.

The Historical Process of the Modern School

Protestantism and Modern Bureaucracy

Weber's main theoretical concerns about religion concentrated on the analysis of the process of rationalization

which built modern western societies. He ascribed the most influential power, which brought a huge change in rationalized western society, to the religions of Protestantism (Weber 1981, p. 362). The rationalization of domination and the appearance of rationalized bureaucracy is one segment of this huge process of disenchantment through religion. In attempting to make clear the basic characteristics of the university organization and the school organization through Weber's theory, the reexamination of charismatic domination and bureaucratic domination becomes indispensable, because European higher education had developed under the influence of Catholicism and provided the basic framework of modern schools. The history of schools since the European Middle Ages will be understood more clearly by seeing its process as a change from charismatic domination to bureaucratic domination in education. Weber's comparison of the German University with the American university means the comparison of these two dominations.

The modern rationalized bureaucracy was an outgrowth of hierocratic domination which characterized the western world of the Middle-ages, and this domination was one kind of charismatic domination in the world of Catholicism. The church organization, which was the actualized form of hierocratic domination, was a relatively more rationalized organization in the western Middle Ages and emerged as a result of the routinization of charisma (Weber 1968, p. 1121). In particular, discipline as a most important component of bureaucracy was also developed in this charismatic world of monasteries and contributed to maintaining church organization as relatively rational. It was originally derived from religious activity, which was viewed by Weber as an other-worldly asceticism in the monastery. In the Middle Ages, the monastery was a hotbed of discipline because ascetic activities were the most important religious activity. "The gradual rationalization of asceticism into an exclusively disciplinary method reached its apex in the Jesuit order" (Weber 1968, p. 1172). Though this discipline, which was fostered by asceticism and confined to the monastery, could not spread throughout the secularized world, it prepared trained staff and contributed to making the church a relatively rationalized organization. But this church had some degree of irrationality because the office had charismatic characteristics which could not bring about obedience in the man who did not feel a charismatic connection to the church. The church organization had remained relatively irrational at least in the factors which connected individuals to it in the first place. According to Weber's perspective, the German university was typically included in this hierocratic world and had charismatic characteristics. It was under the strong influence of Catholicism and still retained the traces of office charisma. However, the American university, which was built in the colonial ages, was mostly free from Catholicism. America is a country that was dominated by Protestants and there was no sign of the charisma of office.

Disciplined activities, which are essential for the rational operation of an organization, were the products of the inner-world asceticism of Protestantism. Through the Reformation this became a popular ethic in which many people could take part. Concerning this asceticism, Weber referred to the result of the Puritan idea of the calling in the business world as follows:

> for our purposes the decisive point was, to recapitulate, the conception of the state of religious grace, common to all denominations, as a status which marks off its possessor from the degradation of the flesh, from the world. ... though the means by which it was attained differed for different doctrines, it could not be guaranteed by any magical sacraments, by relief in the confession, nor by individual good works. That was only possible by proof in a specific type of conduct unmistakably different from the way of life of the natural man (Weber 1930, p. 153)

This inner-world asceticism introduced drastic changes for the "natural man" who had continued to reproduce conventional life according to instinctual gratification, and it regulated affective and emotional conduct. It also excluded traditional practices which were often founded in magic and caused many irrational activities. This ethic introduced impersonalized relationships into secular organization. The personal relationship,

that had been retained under traditional or charismatic authority and had caused irrationalities, was finally excluded from the organization. This ascetic behavior made it possible for people to act like cogs in a machine, thus internalizing disciplined behavior. Discipline made humans calculable. The asceticism which was fostered by Protestantism became a popular ethic and created important resources of discipline to make the organization more rational. Protestantism also rejected office charisma as idolatry and "eradicated all charismatic respect towards the power-that-be" (Weber 1968, p. 1140). A new kind of organization which never existed before was established, a modern rationalized bureaucracy. American universities are typical examples of such rationalized organizations. Human relationships became more and more impersonalized in these rationalized organizations. The teachers limited their role to the transmission of knowledge and refused to become prophet to teach students their world-view.

The ideal type was a theoretical construct which actually never existed but was conceptualized by emphasizing the rational aspects that make clear the above historical background. While it was made by exaggerating one aspect of rationality, the irrational activities which existed in actual organizations were intentionally excluded from this concept. Thus, Weber's theory of bureaucracy, which included such attributes as the principle of official jurisdictional areas, principles of office hierarchy, management based upon written documents, office management through training in a field of specialization, full working capacity of the official, and management followed by general rules, was completed (Weber 1968, pp. 956-958). Weber never ignored the existence of irrational activities in the actual organization. In the university, he saw the teachers who taught the ideologies from the lecture platform as charismatic and irrational beings, and the students who affectively engaged with such teachers as behaving irrationally. But these irrationalities were not included in the theory of bureaucracy as an ideal type, to make more striking the rationality. Many researchers who have tried to analyze the actual organizations fail to understand Weber's theoretical background and criticize his theory as unrealistic for ignoring irrational aspects of the actual organization. Although there is no doubt about the existence of various loosenesses and of irrationality in school organizations, this fact does not make Weber's theory meaningless. When his theory is reconstructed, it becomes clear that his theory has much merit.

The Emerging Process of the Rationalized School

Old schools such as grammar schools, colleges, and Gymnasiums in western society were built under the influence of Catholicism. Foucault argued that discipline in the school was originally developed in the monastery and was successful in organizing students in school (Foucault 1975, p.149). While the monastery offered discipline in the church and made it a more rationalized organization, it prepared discipline for the school. Though Weber argued for the significant role of the Jesuits in making a more rationalized discipline, this order was also active in establishing and supporting colleges. The schools at this time became relatively rationalized organizations. Foucault cited three areas of discipline; time, space, and body, and indicated some principles of discipline. First, he made clear that to organize many people, some techniques for the distribution of individuals in space were employed, such as the principle of enclosure, the principle of partitioning, the rule of functional sites, and the technique for the transformation of arrangement. In addition, he referred to the control of activities by time which is an inevitable component of discipline, such as the use of a time table, temporal elaboration, correlation of the body and gesture, and body-object articulation (pp. 135-169). In these contexts, Foucault understood that in the medieval period, the school had also developed various techniques to organize students.

At the elementary level, the most rationalized schools, the so called monitorial schools, were built by Lancaster who worried about the increasing numbers of children at the beginning of the 19th century in London. He was obliged to invent a more rationalized system which would enable the teaching of a large

number of people, and eventually introduced the disciplinary revolution into the modern school. It is said that Lancaster himself was not an enthusiastic Quaker, but he emphasized the importance of teaching religion to young people. His system was also supported by the Quakers. The American Quakers immediately imported this system from England, and New York City became a mecca of the monitorial system in America (Reigard 1916; Kaestle 1973). Both in England and America, the Quakers took nondenominational attitudes toward religious education. This tolerance towards other denominations was their traditional attitude which was retained from the old times and was very effective in gathering many poor children. Especially in America, this system was very effective because of the increasing number of immigrants who belonged to different denominations. In the beginning of the 19th century, Lancasterian schools were enthusiastically developed in America and achieved a great success in absorbing many children who belonged to different denominations or to no organized religion at all. As the American university was founded under the influences of Protestantism, the elementary school in America was also constructed with contributions from the religious passions of Protestantism (Smith 1967). Although Quakerism had some differences in doctrine from Calvinism, Weber saw it as one sect which was included in Protestantism (Weber 1930, p. 147). Lancasterian schools were completely the product of the Quakers' inner-world ascetism. Quakerism was a typical agent of inner-world asceticism and contributed to making the Lancasterian school the most secular and rationalized one.

The Lancasterian school had two ways of controlling children to make the school more rationalized. One was to control the children from the outside and the other was to control them from the inside. First, two kinds of monitors were put in. One was general monitors of order who directed the general operations of the school, and the others were subordinate monitors whose responsibility was instructing the child. General monitors consisted of four kinds of monitors: general monitors of order, monitor general of reading, monitor general of arithmetic, monitor general of writing. General monitors of order were responsible for the order of the whole school (Free-School Society of N.Y. 1820, p. 46). This means that the Lancasterian system had administrative staff who were responsible for coordinating and evaluating the other monitors' tasks. The administrative staff are the most important tool in the domination of the mass by a head. Monitors were never regular teachers, nor should they be seen as formal administrative staff. Although this human apparatus remained primitive, it was on the point of becoming a full bureaucratic organization. Second, for keeping order and smoothing the operation of the school, Lancaster used disciplinary techniques other than the corporal punishment and whips which were exclusively adopted in traditional schools (Kaestle 1973, p. 8). It would eventually be impossible to keep order among some hundreds of students through corporal punishment. Many activities in Lancasterian schools were prescribed minutely. The affective relation between teachers and students was separated from school organization and the impersonal relationship became dominant. This discipline also became an important component of modern bureaucracy which was to facilitate the calculability of human conduct. This calculability was a product of Protestantism and resulted in school organization.

Accomplishment of Modern School as a Bureaucracy

But this system had two limitations in its construct. First, the content and the form of rationality was changed according to differences in the social environment of the school. The monitorial system was a product of the age of the industrial revolution and the main purpose of school education was to teach the 3R's, to understand Scripture, and to keep social order. The curriculum was divided into minute segments for monitors to teach easily to many students through rote. After the mid-nineteenth century, when industrialization became advanced, this system became ineffective. As the main purpose of school education became to foster useful laborers and good citizenship, new subjects such as geography, history, and many

other subjects had to be taught to the students. The schools were required to teach a broader curriculum. This means that the monitors who were useful only to teach mechanically the minutely prescribed curriculum had to be dismissed. In the more industrialized age, the monitorial system became ineffective and schools had adopt to the more rationalized organization.

Second, this school was primitive as regards the level of rationality of organization, because the monitors were neither professionally trained teachers nor administrators. From the mid-nineteenth century when the compulsory education begun, these schools were integrated into the public education system and received public financial support. Professional teacher training also began at the normal schools and trainees gradually took the place of the monitors. When Lancaster himself started his school as a teacher in London, he used his father's house and depended on the voluntary activities of private philanthropic support. In America, Lancasterian system was maintained by voluntary and entrepreneurial activities, too. But these voluntary and entrepreneurial schooling was gradually replaced by the school system which publicly systematized these private schooling (Richardson 1986). As schools became publicly supported, teachers became salaried workers and separated from the responsibilities of providing the means of teaching. Weber saw "the separation of the worker from the means of production" as a most important index of bureaucratization in any organizations (Weber 1989, p. 5). The superintendent as the head became dominant over the teachers. These changes reveal that the school organization became a "incipient bureaucracy (Katz 1987, pp. 41-53).

These changes of school organization at the administrative level result in some improvement in methods of organizing children. Although Lancaster classified students by ability and made homogeneous groups consisting of about ten students, each group was heterogeneous in other respects, namely in differing ages. Compulsory education, which had to assure all children of elementary education, required a more rationalized way of organizing students. At the end of the 19th century, a new homogenization of children was attained by the age-graded system which classified the children by age.The school class which was defined by its own room and own teacher, was developed. The class was a very important manageable unit which, on the one hand, assumed that same-aged students had similar interests and ability, and on the other hand, cut off other children of different ages. But later, a more homogeneous and standardized class was formed by adding ability grouping through such techniques as streaming or setting. As homogeneity of raw materials was a prerequisite for rational management by companies which processed various goods, so the school as a people-processing organization required the homogenization and standardization of children as materials. Children who merely aggregated in a jumble in earlier times and learned separately from a single teacher about various subjects in undifferentiated situations were now classified by age, ability, and subject, and were ordered to learn simultaneously in a classroom which was supervised and taught by classroom teachers and subject teachers.

Becoming compulsory, school education changed from the one-room school to the school of many classrooms and many teachers. Increasing the number of teachers made it necessary to put into the school administrative staff such as principal and vice-principal. In addition to these classroom teachers and subject teachers, new concepts of education which emphasized the individuality or spontaneous activities of students stimulated the necessity of employing many specialized teachers. By emphasizing services according to the needs of students as individuals, schools included a large number of teachers and many other staff. Individuality itself tends to disrupt the smooth operation of the school organization which requires standardization and degradation of students (Garfinkel 1956). But ironically, the emphasis on individuality in teaching under the standardized situation made the school organization more complex and intensified the tendencies towards bureaucratization. Thus, the school organization became complex and more bureaucratic.

While at the beginning of the twentieth century, "scientific management ", which was founded by one Quaker, F. Taylor, had enormous influences on every aspect of life, school education was also affected by

this strong wave, especially in big cities (Bobitt 1913). Weber, who visited America and observed a factory which was managed by the "Taylor System" concluded that this system was the most rationalized system which maximized the calculability of the productivity of labor (Weber 1968, p. 150). This system was adopted in the educational administration and attempted to exclude many wasteful activities from school. The school became controlled by the cult of efficiency (Callahan 1962). Efficiency became the most important goal, and school organization was exhaustively rationalized. As Weber saw the development of bureaucratic organization, we can see the development of the school organization as a bureaucratic organization in America. Not only the university, but also the elementary and secondary school had become bureaucratic organizations under the influences of Protestantism which brought the "disenchantment of the world" into America. As long as we see, historically, the emerging process of school organization and confirm the influences of Protestantism, it is impossible to deny the validity of Weber's theory. Like various organizations such as factory, armed forces, hospital,and police office, the school is a typically bureaucratic organization.

In analyzing the school, it is the most important that it has changed from an irrational state to a rational one. In most schools in the Middle Ages, and in the charity schools in the 18th or 19th centuries, there was only one teacher who taught a few subjects to students, individually, and the ages of the students were different. The attempts at dividing the teaching content into separate subjects and segments, and ordering them from simple to complex, were not recognized. Dividing students by age and ability and making homogeneous groups was unfamiliar too (Aries 1962, pp. 176-177). Through these devices, the modern school could accomplish the simultaneous teaching of various educational contents to many students very effectively. Old schools and modern schools are decisively different in regard to the arrangement. Though the former was in a confused state, the latter is very systematic in arrangement of time and space, grouping of students by age and ability, and the division and ordering of teaching contents, etc. (Hogan 1989, pp.405-406). Because, normally, we do not compare these schools of different types in this ways, we are unable to identify the structural characteristics of the modern school which consists of many students and is divided by grade, with teachers who teach one class or one subject. If we can make this comparison easily, it is not difficult to understand that the modern school is a more rationalized one. Most researchers who denied the applicability of Weber's theory of bureaucracy to the analysis of the school organization failed to make this comparison. Through the concept of the disenchantment of the world, Weber saw the change of the world from an irrational state to a rationalized state, and we can confirm the same change in the school from an irrational one to a more rationalized system.

Rationality and Irrationality in the Machine and the Organization

Machine and Irrationality

The modern school which was mainly founded by the endeavors of Protestantism and had many devices for organization and teaching, was also one product of a modern technology which has provided many machines. The machine and the organization have common characteristics. As was well known, in the 17th century Comenius, who is famous as a pedagogue and at the same time a missionary of Protestantism, saw the school as a printing machine and a watch. In the 19th century, many people who saw the Lancasterian school in England and America spoke of the school metaphorically as a machine and Lancaster himself spoke about his school as a wire-drawing machine (Kaestle 1973, pp. 11-15, Hogan 1989, p. 404). In the era when the plan of mass education was elaborated and this plan was actualized, many people saw the school as a machine. But many investigators of school organization rejected this opinion and have asserted that school organization was not bureaucratic and not a machine. What divides these theorists from Weber?

Why do people today never see the school as a machine? How can we explain the various types of looseness of the school from Weber's perspective? To solve these problems, it will be necessary to clarify more precisely the nature of this rationalized school which was founded by Protestantism by comparing it with a machine. But before examining these problems, a more precise examination of the basic nature of a machine is essential because when the rational model is criticized as a machine model, the nature of the machine itself has been taken as self-evident. In this case, though the machine tends to be thought of as very rational, the fact that it has many irrational phases and many kinds of looseness has been overlooked.

In general, to maintain the smooth operation of a machine, some technical requirements which relate closely to the irrationality have to be met. First of all, the machine is an artificial product and consists of various parts which are made from raw materials. These parts are synthesized from natural materials, completed as components, and utilized. While things in a natural state are mixed with many kinds of material in an undifferentiated way, modern technology removes the impure material and makes the artificial machine which is composed of purified materials. In this sense, it is said that the machine is a product of the technique of purification and, at the same time, always needs attention to get rid of irrationalities such as impurities for the sake of efficient operation. The rationality of a machine becomes possible only through resisting the irrationality of impurities. It is important to think about the nature of machine because this process has become invisible as a result of routinization in using machines. Secondly, as to its structural characteristics, the machine embodies the three characteristics of standardization, specialization, and harmonization. As a result of purification, measuring the qualities and activities of many parts becomes easy by using various kinds of units. The various purified parts and their movements are also standardized and normalized. Through limiting the function to a specialized area, each part can maximize its activity. To harmonize the different functions simultaneously, a controller is essential to the operation of the machine. But smooth movement will be impaired by nonstandardized parts. In case of low efficiency of parts, the operation of the machine may be interrupted, and a bad controller may also bring about various troubles. In this sense, the machine always fights against irrationality. Thirdly, from a functional perspective, there are no machines which are free from troubles caused by various kinds of disturbances from inside and outside. Any part which is made precisely to conform to the standard may be damaged, wear out, or become old, and the operation is disturbed. Alternatively, the machine can become inefficient because of poor quality material or fuel. From outside, the machine always faces various kinds of impacts which impede its smooth operation, or destroy the machine itself. To avoid these troubles, on the one hand, the machine is regularly inspected and repaired, and, on the other hand, a buffer system and a control system can be installed which both bring some degree of looseness into the machine. The machine is also required to fight against these kinds of irrationalities such as pressure, impact, and noise.

Externally every machine seems rational, and the blueprint is designed very rationally. The blueprint mainly depicts a purified world. But actually these machines always face various kinds of breakdown, and against such accidents certain kinds of equipment are installed. In this meaning, we are able to conclude that there is fierce battle between rationality and irrationality in machines. With regard to the machine, we always talk not only about its efficiency, but also about the noise, impulse, impurities, and breakdown, etc.. These mean that every machine is subject to serious problems which are caused by these irrational factors. It is very superficial to view the machine only as a rational entity. Machines also have many kinds of looseness which are related to irrationalities in various senses. That is, to avoid trouble and to maintain the smooth movement of the machine, various techniques have to be built into the structure. To reduce friction, lubricating oil is poured into the gear wheel. If all the parts are connected to each other tightly, the machine is in danger of losing its flexibility and can easily be damaged by a strong impact. The loose-coupling of parts is indispensable to the stable operation of the machine. Machines also have many devices to protect

them from abrupt external shocks. To guard an elaborate machine against exposure to the weather and various other kinds of influence, the body is covered with many kinds of barrier and fitted with shock absorbers and many other buffers, such as springs or suspension in a car. These techniques and devices bring various kinds of looseness into the machine. The control system also incorporates looseness. Most machines use two modes of control, a feed forward control system and a feed back control system. The former system is mainly used in a subject which is in constant operation. But the feed back control system, which is more sophisticated than the former, is used in a subject which is always changing and brings disturbance into the machine. This system is made possible by the use of sensors, and the development of electronic sensors makes automatic control possible. Complex modern machines use these automatic control systems that make relatively autonomous decisions and movements. This autonomous movement also means that the machine has structural looseness.

Purification in the Organization, Standardization, Specialization, and Harmonization

When Weber argued about the theory of bureaucracy, his main purpose was to make clear through cultural and historical comparisons the differences of a modern rationalized bureaucracy from other non-rational bureaucracies and other nonrational dominations. As previously said, Weber's description of the bureaucracy as an ideal type emphasized this historical context. Although he understood that there are many irrational activities in the actual bureaucratic organization, he intentionally excluded them from his theory for constructing the ideal type of rational bureaucracy. It is thought that the ideal typical concept of bureaucracy is one kind of such a blueprint and portrays the purified world. In actual organizations, there are many irrationalities in various areas of activity, and organizations can always attempt to exclude them as best they can.

First, though the organization has a specific goal, this means that the specific function was solely drawn from daily life, which included various activities undifferentiated, and purified as an organizational goal such as manufacturing, governing, defending, and curing. The worker was also purified as a person who took a specific role as a vocation. Puritans not only purified the church through eliminating the traces of Catholicism, but also purified the secular daily world. Secondly, the Puritan was disciplined through the inner-world ascetism of Protestantism, and his behavior in an organization was easily standardized and became calculable. The Taylor System did introduce this kind of standardization into human activities on a large scale. Modern bureaucracies need to employ those staff who are trained to work in a fully specialized field. This process will also be seen as specialization. In an organization, many staff who are trained in different fields are gathered and assigned to different parts to take specialized roles as if the various parts worked differently. These specialized activities are controlled and harmonized for the organization to work smoothly. The hierarchical organization was developed and managed through written documents. Thus we may confirm that the organization and the machine have common principles such as standardization, specialization, and harmonization. Thirdly, purification and these principles of organization became possible only through the elimination of various irrationalities which are inevitable in human beings. The behaviors which impede calculability, such as instinct, impetus, and negligence, have to be eliminated from the organization. Workers of bad quality are eliminated, or retrained. A man who ignores the order of a superior is required to resign. Like the machine, the organization also eliminates many kinds of irrationalities for the sake of keeping the organization rational. In particular, the discipline which is indispensable to the establishment of a rational bureaucracy can exist only through the suppression of irrational activities. Originally, the asceticism of Protestants excluded affective and emotional conduct from "the natural man" because it was thought that indulging in such conduct was a blasphemy against God (Weber 1930, p. 145). Weber saw that these disciplinary activities have survived even in the modern era when religious fervor has

become weak.

But actually it is impossible to exclude completely human irrationality. The suppression of irrationalities is difficult to achieve and people always retain many irrationalities. Sometimes they behave rationally, but at other times irrationally. Furthermore, it is thought that the more the rationality of our conduct is emphasized, the more people are tempted to behave impulsively. Rationality and irrationality are inseparably related. To investigate rationality does not imply excluding the examination of irrationality, but investigating it more fully. An actual organization has two faces, rationality and irrationality. The organization is a battlefield of rationality and irrationality. On the one hand, the organization always tries to pursue the rational arrangement of all activities for goal attainment and to control its members strictly. On the other hand, the organizational members have various irrationalities and, though prohibited, these are brought into the organization and impede goal attainment. The organization has two phases of rationality and irrationality and both always attempt to dominate. The organization cannot be free from this tension (Gouldner 1959). Externally, the organization may have a clear blueprint for goal attainment, but behind this many irrational sentiments and behaviors lie concealed and watch for a chance to appear. It is no wonder that the organizational goals are frequently ignored, replaced, or became ambiguous through these irrationalities. But if they were amplified or attended to, strong control would be exercised over them to prevent the organization from collapse. As the physical machines are threatened by inner factors such as friction, corrosion , and aging of parts and disturbance of their smooth movement, so organizations are always disturbed by inner factors such as workers' carelessness, hostilities, irresponsible attitudes, and incompetence. Just as machines are periodically inspected and repaired to avoid troubles, so the organization always supervises its personnel and adopts various personnel management strategies.

Unlike the machine, however, more sophisticated strategies were developed in an organization to reconcile rationality and irrationality and to make goal attainment certain. As is well known, the famous Hawthorn experiment marked the beginning of the practical exploitation of the irrationalities of workers in order to improve effectiveness in a company. If these irrationalities are used appropriately, they may possibly become not the enemy of an organization, but its friend. In this situation, the organization does not get rid of the irrationality, but tries to coax it to contribute to goal attainment. It may be better to say that actual organizations always attempt to keep both rationality and irrationality in an equilibrium. Every organization has to allow some degree of irrationality for its stable operation. In this context, we can identify three types of irrationality in organizations. One is a "crude irrationality", which is inherent in human being and has nothing to do with rationality. It was thought that in pre-industrial societies without disciplined life, many people could enjoy a relaxed life without being pressed for time. The second one is a "counteractive irrationality" which arises in resistance to rationality. When discipline becomes stronger, someone will resist it and attempt to escape. Being late may be a result of late rising, but it may also be a result of a hostile attitudes towards discipline. The third one is a "controlled irrationality", which is developed to exploit irrationality towards goal attainment through intentional operation. As a result of this irrationality, workers may come to their workplace punctually.

Looseness in Organization

Most organizational analysts distinguish the rational model and the factory model from other models such as structural looseness, loose-coupling, and the anarchy model, and stress one phase of the organization only. But because organizations have dualities of rationality and irrationality, it is hardly surprising that they also have rational and tight phases, and flexible and loose phases, at the same time. The differences among many organizations will depend on the balance between rationality and irrationality.

It is not difficult to find various kinds of looseness and flexibility which stem from irrationality in an

organization, as is the case with a machine. Firstly, the organization has some reason for having looseness which originated from inside and outside. To avoid various frictions among organizational members, formal staff meetings are frequently held, and some informal relationships such as social gatherings, recreation, and tea breaks are installed. Public relations are also one kind of buffer to protect the organization from abrupt shocks. In addition to these devices, ritualized relations and rules between the organization and the environment may also make some kinds of looseness and contribute to decreasing the strain. Second, functional autonomy is one way of dealing with complex matters in an organization. For example, to treat the different and complex problems of clients, limited supply of resources, and unstable markets, some departments can enjoy more wide-ranging powers of decision making. Or the department of research and development can enjoy considerable discretion because the subjects which this department treats have many uncertainties, and without broad discretion this department could not attain its goal. To deal with these contingencies, an organization tries to keep its management flexible. The organization as well as the machine necessarily institutes some looseness as a structural requirement.

Rationality and Irrationality in the School Organization

The School Organization as a Purified World

The school is also a purified world in several regards. The aim of the school is to attain its goal of education which is extracted as a specific function from the daily life of the traditional and communal society. Education is a purified set of activities which has become actualized since the industrial revolution in Europe. Teaching is a purified activity as a vocation, and the teacher is a purified worker in the sense that child rearing had not been clearly divided from other daily jobs in the secular world of pre-industrial societies. In the medieval religious world, the teaching function was included in the work of the priesthood. The monopolization of the teaching function by the teacher in modern society means the purification of socializing functions which were borne traditionally by the priesthood in the religious world and by all people in the secular world. In addition to this, the professionalism of teaching means that the profession tends to divide work into core work and other work, and also tends to exclude the tedious and less interesting tasks as "dirty work" (Goode 1969, p. 284). They purify their tasks and monopolize them.

But this purification brought more huge transformations to children's lives. As Aries said, in the Medieval Age children were not divided from adults, and they lived with other people without any clear distinctions of age (Aries 1962, p. 128). But in modern society, children became separated from adults and organized into schools. When Foucault referred to discipline, the subjects were all of human kinds including the criminal, patient, orphan, and student. These are the raw materials which were to be processed in each organization. The more the raw materials were purified, the more the organization could operate smoothly. Students were one kind of raw material which is to be processed by the machine called school. In school, there arose some devices to maintain the homogeneity of students. School children can be seen as purified beings using indices of age, ability, and course of study. In pre-industrial society, the school was not so purified, and one teacher taught various subjects. Students were not divided clearly in accordance with age or abilities. The monitorial school was the first purified school because it limited its teaching activities to the 3R's, divided the students according to their abilities in these subjects, and introduced the division of the teaching work of monitors.

Under these conditions, the school standardized its members' activities through discipline. Not only is the teacher required to obey order unconditionally, but pupils also have to be subject to order. Normalized activities became dominant in the school organization. At the beginning of the 20th century, the Taylor

System was applied to school administration and tried to standardize most educational activities. Teaching content was broken down into different subjects, and teachers themselves were divided according to the differences of their subjects. The curriculum is a typical example of the specialization and the standardization of educational content. Many other specialized staff increased as a result of the division of teaching staff. To control many teachers, an administrative organization was developed in each school and in the school system, too, and it harmonized the various activities of many teaching staffs.

The Buffer and Looseness in School Organization

In general, schools are seen as a stable entity which does not collapse easily. But when we confirm the accomplishment of rationality as an outgrowth of Protestantism and see the organization as a battlefield between rationality and irrationality, it becomes clear that the school as a machine is very unstable and easily broken down. Organizations cannot avoid involvement in the conflict between rationality and irrationality and are necessarily obliged to have some degree of instability. But the conflicts in which the school is involved are more serious because of its moving subjects. The children which the school organization processes are not stable, and they have free will, always circulate, and never cease to move. Sometimes children will resist the order of teachers and exert influence on the school organization. Although every organization is bothered by irrational activities of its members, in a school organization, not only the irrationalities of the teachers as full members, but also the irrationalities which the students, as material or client, bring into the school make its organization more unstable.

Originally, Protestantism, which contributed to the development of modern bureaucratic organizations, was the religion of adulthood, because most Protestants denied baptism in childhood and supported the baptizing of qualified adults (Weber 1968, p. 1207). Rational activities which were fostered by the inner-world asceticism of Protestantism would not be hard to adopt by adults, but for children it is difficult to adapt to such activities. Later, modern rationalized organizations were built by adults who were trained to behave more rationally through their religious belief. Needless to say, the school is one such organization. It was difficult for children who had never had such religious experiences to become familiar with the school organization as a more rationalized bureaucracy.

These irrationalities in schools are intensified further by the greater numbers of children and their heterogeneity. First there are enormous differences between the numbers of teachers as full members and children as materials. The larger population of the school consist of students who are more irrational than the teachers. This majority group has enormous power. When this power explodes, the school is obliged to disorganize. Secondly, although these children are grouped into homogeneous classes through grading and streaming, they are different in their value, character, sentiment, and behavior. They are also different in their familial and social class background. The private school may be able to maintain homogeneity in ability and economical level through rigid screening. But public education has to accept many different students from its district. A type of treatment which is useful to one child may be ineffective with another student. The school organization is always required to seek effective ways of treating each child, but it is never certain of the best mode of treatment. Schools always contain unsatisfied elements.

Although the school has been considered the most appropriate place to put children in general, we are required to come to the opposite conclusion, that the school is the most unsuitable place for them. That is to say, a school organization is the most severe place for children who tend to behave more irrationally. Conversely, for the school, children are the most dangerous elements, who can block the rational operation of the school organization through their irrational activities. The school is also more vulnerable than any other bureaucratic organizations to its irrationality which is aroused by clients from outside. To maintain stable organization, the school is required to install more minute devices for treating irrationalities. That is

to say, school organizations need to install buffers to protect the organization from abrupt impacts, and need to have some degree of play to maintain the smooth operation of the school. Some kinds of lubricating oil also have to be poured into the school organization. As machines which have no such devices are weak and easily broken down, the school which has no devices to block and reduce shock will be easily upset by an assault from students.

It is very natural for the school as a machine to have buffers and some degree of play for its stable operation, that is loose coupling among many activities, between teachers and students, and between the school and the environment. Here, looseness means the indirect and cushioned relationship in the school organization. To characterize the organizational traits of the school as "structural looseness" will emerge as a matter of course too. First, it may be correct to say that the monitorial school was so primitive as a machine that it had no such oil, play, and buffer and had difficulties in dealing with various impacts from its students. The machine which was developed by Lancaster was doomed to be replaced by the new type of school which was equipped with shock absorbers and had many flexibilities. Today, the school has various kinds of buffers such as extra-curricular activities, humanized teacher-student relationships, counseling, and many other devices. Clearly, the philosophical and psychological theories which stress the humanized character of education have contributed to the introduction of these devices into the school. Negotiation and strategy also contribute as buffers to prevent disturbance from students. Secondly, the school organization also faces impacts from the environment. If the people in the community do not accept the legitimacy of the existence of a school, it may fail to get full fiscal support. The teacher's authority will not be maintained, and the school organization may be destroyed. Just as a machine has many devices, such as bumpers and suspension, to block abrupt impacts, the school also has some devices. Associations of parents and teachers have been formed and often function as an effective cushion. The school always offers information to the community through the press to avoid any assault caused by ignorance about the school. Furthermore, the school establishes isomorphism with an elaborated institutional environment through rituals of confidence and good faith, and it becomes possible to avoid involvement in conflict with the people (Meyer 1977). The block is formed in people's minds. Between the school and the environment, a social buffer has been created and school can ingeniously evade direct surveillance from the outside.

The Control System in Schools

Since the opening of the monitorial school, schools have attempted to strengthen the standardization of students' behavior through discipline and the tightening of various rules, which maintained the rationality of the school. These students were divided into 8 and 10 classes according to their ability in writing and arithmetic respectively. The teaching content was also divided into grades from the simple and straightforward to the complex and difficult (Free School Society of N. Y. 1820, pp. 20-21). The children and the teaching contents were purified through homogeneity of abilities and teaching contents. Traditional schools such as grammar schools and charity schools have no such classification and discipline. This change in schools had the same significance as with the change of control systems in machines. At the primitive stage, the machine was controlled manually. After the industrial revolution, many methods of automatic control were introduced as a substitute for human power, which often varied according to the mode of the moment or the degree of fatigue. This control kept the subject itself constant to avoid disturbances and is now called feed forward control. The monitorial system introduced this feed forward control system into education. Discipline of students, classification of students by ability, and ordering of teaching contents meant that disturbances which were caused by lack of discipline, mixed ability, and unordered contents were eliminated by prior purification. The technical background to the adoption of monitors was this feed forward control system, which is a simpler and cheaper control system.

TABLE 1. Characteristics common to the Machine, the Organization, and the School

	purification	structural principle	treatment of irrationality
machine	material	standardization	buffer system
	part	specialization	feedback control
	fuel	harmonization	
organization	organizational goal	standardization	staff meeting
	expert	discipline	decoupling
	professional	specialization	ritual
	degradation	harmonization	professional autonomy
school	educational goal	standardization	staff meeting
	screening of teaching contents	discipline	decoupling
	expert	specialization	professional autonomy
	degradation	harmonization	extra-curricula activity
			ritual

This feed forward control system became unuseful, however, for the following reasons. First, over-rationalization and simplification of teaching through these means sometimes had dysfunctional effects on education. It is not certain that the stronger the rationality of a school becomes, the more the students become eager to learn. The suppression of the irrationality of students may decrease their will to learn because desires themselves are one kind of sentiment which is irrational. The simple, monotonous, and tedious life of the school, where chattering is prohibited, may decrease the learning desire in students. Some students will not only refuse to attend school but also resist teachers who attempt to maintain school order through tightening the rules in every possible way. Teaching became a more complex type of work which could not be carried out by the monitor, because the students became a vigorous source of disturbance. Secondly, as a result of industrialization, schools were required to offer more extensive knowledge to the students. It is not so easy to teach this new content as with the 3R's, because the new subjects such as history, geography, and chemistry have more complex contents. To use mechanical terminology, they include a large number of disturbances. This made it impossible to transmit knowledge through monitors who had not been trained as teachers. Thirdly, as a result of compulsory education, the school had to accept all children. To realize this requirement, schools introduced the grade system and classified the students not by ability but by age. In the classroom, another purified group was formed, that is the group of the same age. Although this group was pure with regard to age, it was different and impure in respect to abilities in the various subjects. This group also came to be a source of many disturbances.

These disturbances, which were caused by the irrational sentiments of students, complexity of teaching subjects, and differences in ability, necessarily made the feed forward control system not helpful and led to the introduction of another new kind of control system, that is, the feed back control system. After the decline of the monitorial system in the mid-19th century, the grade system, in which each class had its own room and its own teacher, spread in step with the development of compulsory education. Just as a machine with a feed back control system has sensors, so the teacher himself become a sensor to detect the various activities, needs, and complaints of the students. He also came to have the responsibility for treating individual

children who differed in abilities and teaching miscellaneous contents to them. This feed back control system introduced flexibility into the teacher's activities and decisions, because the disturbance caused by the variety of students and the complexities of teaching materials did not allow strict regulation of the behavior of students in the classroom. Autonomous activities were adopted by the teacher, and individual rather than whole-class teaching methods were gradually stressed. The teacher's role came to include managing the various irrationalities which derived from the students and teaching materials. Looseness in the sense of multiple to-and-fro relationships between teachers and students became established in schools.

Professional Autonomy and Structural Looseness in the School

As a whole, school organizations which have the dual characteristics of rationality and irrationality cannot stress the former only, but are always required to keep the school rational. Because of this duality, the school is forced to compromise and to keep an equilibrium between rationality and irrationality. Historically schools have changed the treatment of irrationality from an obstacle to a promoting factor for the smooth operation of the school machine. "The counteractive irrationality" is gradually converted to "controlled irrationality". For this practical use of irrationality, students have to be changed from simple cogs, who automatically and passively obey the order of the monitors, to active persons who can behave autonomously. In the Lancasterian school, already, the passion of the students was evaluated very positively, and Lancaster used emulation, competition, approbation, and rewards, and generated psychological scarcity and multiple desire for the effective operation of the school (Hogan 1989, pp. 398-407). Irrationality, which was eliminated from human conduct in the age of religious revolution, flowed back again into the school. Sentiments, desire, and feelings became very important aids in the smooth operation of the school organization.

This duality of rationality and irrationality is the most important basis for understanding the teacher's discretional activity. When educational content increased and became more complex, the monitor fell behind the times and his place was taken by a teacher who trained in a normal school. In transmitting more complex content, the teacher's professional role inevitably became more important. But in addition, the teacher was then to take on the important and difficult role of a converter of "counteractive irrationality" to "controlled irrationality". As the person who was in the front line of the battlefield between rationality and irrationality, the teacher's role changed gradually from a strict one to a flexible one. Progressivism was one kind of facilitating drug for this change in the teacher's role. Teachers' activities came to have autonomy through these flexibilities. The technical background of functional autonomy lay in this flexibility which accompanied the feed back control system. This autonomous activity which may be enjoyed in an organization is basically different from the professional autonomy which had been enjoyed by the established professions such as doctors and lawyers. The discourse of "Education as a Profession" expanded in the world of teachers as a strong belief (Lieberman 1956). Functional autonomy was amplified to the idea of "professional autonomy" which was used as a theoretical base for trying to exclude bureaucratic control from above. But this functional autonomy was originally brought in to facilitate the school organization more effectively. Though Corwin and other followers did stress the conflict between bureaucratic authority and professional authority in the school organization, it is more accurate to say that this autonomy was primarily introduced as a promoting factor for the bureaucratic requirements of the school. Bureaucratic authority and functional autonomy are not necessarily mutually exclusive. But as a result of the amplification of this autonomy to professional autonomy, the conflicts between bureaucratic authority and professional authority increased and became ceaseless. As professional autonomy became strong, teachers gained discretional power and came to behave autonomously. The more the teacher's role became flexible, the more the organizational structure became loose. This change finally reached a peak in the so called "informal school" movement in England and America. The school organization looked like a non-bureaucratic organization.

The informal school's failure stemmed from this confusion. At first glance, the informal school looked like a non-bureaucratic organization. Certainly, this school set limitations on standardization and specialization to some degree. But this school could not be free from purification and harmonization. Changes in the classroom did not combine to reform the school organization as a whole. Despite some non-graded systems, the students remained purified beings. Many teachers continued to be organized by the principal and other supervisors as specialized workers, no matter how much autonomy they enjoyed in their classroom. Paradoxically, this excessive and illusory autonomy in the classroom brought about the underachievement of students and triggered rigid control from the central governments in England and America. This autonomy could not overcome the bureaucratic principles which were presented by Weber as a type of ideal. The main role of this autonomy remains at best to convert "counteractive irrationality" to "controlled irrationality". The bureaucratic principles may always afford some degree of autonomy and looseness.

Conclusion

Weber described a close relationship between the appearance of a modern rationalized bureaucracy and inner-world asceticism. When we look at the existence of schools, we can also confirm this relationship. Apparently, we cannot ignore the contribution of Protestantism to making a more rationalized school since the beginning of the 19th century. The school is undoubtedly a bureaucratic organization and, in those days, many people saw the school as a machine. But as a result of some successful changes of "counteractive irrationalities" to "controlled irrationalities", discipline has also changed from compulsion to self-discipline by spontaneous will. In effect, on the one hand, the discourse of child-centered education has extended and, on the other hand, the mechanical characteristics have gradually become invisible. This has caused some difficulties in understanding the school organization as a bureaucratic organization. In school analysis, the students as raw material to be processed by the school have been put in a central position, and have come to be seen as full members of the school. The focus had been limited to teacher-student relationships, and the study of the school had become neglected. The discourse of professional autonomy is closely related to this view of students. Initially, the concern about looseness in the school organization derived from the theory of the teacher's professional autonomy. Although the conflict between bureaucratic authority and professional autonomy became the most important theme in the analysis of school organization, this analysis was confined to the frame of rationality. These theories could not extend their frame to the relationship between rationality and irrationality. Since most researchers did not understand the historical and religious background of Weber's theory of bureaucracy, they have overlooked this relationship. The analysis of school organization will become more productive when it is seen as a conflict between rationality and irrationality, order and disorder, and cosmos and chaos.

The school exists in a balance between rationality and irrationality. But the content of rationality is always changing. In the age of the industrial revolution, the aims of the monitorial school were to teach the 3R's by rote. In this case, the use of monitors was very rational. But when educational content increased, the use of monitor became irrational, because the complexity of education required new teaching methods which relied on thinking and reasoning. Classifying the children by grade and allocating a teacher to each class became the most rational mode of arrangement for a school organization. But as the individualities of children became a significant factor in educational thought, the school was compelled to limit its rationality and required to turn in a different direction, that is, towards informality. The meaning of rationality is

always changing in accordance with the social environment surrounding the school and the children. Different types of school may be classified according to these differences of rationality, just as we have various kinds of cars which have different shapes and different functions according to the differences of loads, roads, and other situations.

The school is able to incorporate various types of looseness between teacher and students, between school and environment, between administrative departments and the teaching department, and among the various types of school organization. But we will have a proper understanding of these types of looseness only by putting the mechanical model as a frame of reference into a central position. Irrationality cannot be understood without measuring rationality. To grapple with the problem of understanding looseness without first dealing with rationality inevitably leads to theoretical confusion.

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