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THE UNIVERSITY OF CHICAGO

"Let knowledge grow from more to more
and thus be human life enriched."

Taylor, Frederick Winslow

The inscription "Frederick W. Taylor, Father of Scientific Management" appears on the grave marker of the U.S. inventor and engineer who introduced fundamental reforms in management practices. At a time when power-driven machines were beginning to have revolutionary effects in the countries of the West, he developed a means of improving the quality of industrial management by viewing it as an art based upon scientific principles. Universal in concept, his system, called scientific management, has influenced the development of virtually every country enjoying the benefits of modern industry.

By courtesy of the Smithsonian Institution, Washington, D.C.

Taylor.

Taylor was born in Philadelphia on March 20, 1856, the son of a lawyer. His early education included study at Germantown Academy and a European trip with his mother. Intending to follow his father's profession, he entered Phillips Exeter Academy in New Hampshire in 1872; he led his class scholastically and excelled in baseball as pitcher and team captain. After passing the entrance examination for Harvard, he was forced to abandon plans for matriculation, as his eyesight had deteriorated from night study. With sight restored in 1875, he was apprenticed to learn the trades of patternmaker and machinist at the Enterprise Hydraulic Works in Philadelphia.

Three years later he went to the Midvale Steel Company, where, starting as a machine shop labourer, he became successively shop clerk, machinist, gang boss, foreman, maintenance foreman, head of the drawing office, and chief engineer.

In 1881, at 25, he and a tennis partner won the National Doubles Championship; the same year he introduced time study at the Midvale plant. The profession of time study was founded on the success of this project, which also formed the basis for Taylor's subsequent theories of management science. Essentially, Taylor suggested that production efficiency in a shop or factory could be greatly enhanced by close observation of the individual worker and elimination of waste time and motion in his operation. Though the Taylor system provoked resentment and opposition from labour when carried to extremes, its value in rationalizing production was indisputable and its impact on the development of mass-production techniques immense.

Time and motion study

Studying at night, Taylor earned a degree in mechanical engineering from Stevens Institute of Technology in 1883. The following year he became chief engineer at Midvale and completed the design and construction of a novel machine shop. In 1884 he also married Louise Spooner. Taylor might have enjoyed a brilliant fulltime career as an inventor—he had more than 40 patents to his credit—but his interest in what was soon called scientific management led him to resign his post at Midvale and to become general manager of the Manufacturing Investment Company (1890–93), which in turn led him to develop a "new profession, that of consulting engineer in management." He served a long list of prominent firms ending with the Bethlehem Steel Corporation; while at Bethlehem, he developed high-speed steel and performed notable experiments in shoveling and pig-iron handling.

At 45 Taylor declared that he could no longer afford to work for money, and he retired, partly also for reasons of health. He continued, however, to devote time and money to promote the principles of scientific management through lectures at universities and professional societies. From 1904 to 1914, with his wife and three adopted children, Taylor lived in Philadelphia. For recreation, he grew roses, transplanted huge box trees in his garden, and, developing an enthusiasm for golf, built one of the first putting greens with natural ground contours. (His innovative putter with the shape of a capital Y was, however, banned by the U.S. Golf Association.)

The American Society of Mechanical Engineers elected him president in 1906, the same year that he was awarded an honorary doctor of science degree by the University of Pennsylvania. Many of his influential publications first appeared in the *Transactions* of that society, namely, "Notes on Belting" (1894); "A Piece-rate System" (1895); "Shop Management" (1903); and "On the Art of Cutting Metals" (1906). *The Principles of Scientific Management* was published commercially in 1911.

Taylor's fame increased after his testimony in 1912 at the Hearings Before a Special Committee of the House of Representatives to Investigate the Taylor and Other Systems of Shop Management. Considering himself a reformer, he continued expounding the ideals and principles of his system of management until his death from pneumonia on March 21, 1915, in Philadelphia, 18 days after his last lecture in Cleveland, Ohio.

BIBLIOGRAPHY. FRANK BARKLEY COPLEY, *Frederick W. Taylor: Father of Scientific Management*, 2 vol. (1923), is a comprehensive and historical portrayal of the ancestry, boyhood, education, career, and contributions to scientific management of Frederick Winslow Taylor.

(J.F.Me.)

Tchaikovsky, Peter Ilich

Among the most subjective of composers, Peter Ilich Tchaikovsky and his music are inseparable. His work is a manifestation, sometimes charming, often showy, and occasionally vulgar, of repressed feelings that became more and more despairing in later years and culminated in the composition of the *Sixth Symphony*, one of the greatest symphonic works of its time. Though unequal, his music shows a wealth of melodic inspiration and imagination and a flair for orchestration. Its lapses of taste are partly redeemed by enormous technical efficiency. Though his later work rejected conscious Russian nationalism, its underlying sentiment and character are as distinctively

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Tchaikovsky, 1888.
Novosti Press Agency

Russian as that of the Russian nationalist composers. Tchaikovsky's success in bridging the gulf between the musician and the general public partly accounts for the exalted position he enjoys in the U.S.S.R.

Early life and education. Tchaikovsky was born on May 7 (April 25, old style), 1840, in Russia at Votkinsk (now in the Udmurt A.S.S.R), where his father was superintendent of government-owned mines. Because his mother was half French, and it was a customary practice among upper-class Russians of the period, he had a French governess. Tchaikovsky was musically precocious, but his interest in the subject was not actively encouraged because his parents considered that it had an unhealthy effect on an already neurotically excitable child. He adored his governess, but she was dismissed in 1848 when his father changed his post and moved to Moscow and then to St. Petersburg (Leningrad), where the boy entered the preparatory department of the School of Jurisprudence in 1850. There he was obviously disturbed by being treated as a "country bumpkin," but soon settled down happily.

His state of mind was more seriously affected in 1854 when he was 14 and his mother, whom he loved with all the ardour of an acutely introspective child, died of cholera. To alleviate the distress caused to him both by her death and by his easygoing father's comparative indifference to it, he composed a short waltz for piano and even thought of composing an opera. His abnormal love for his now-deceased mother and the ineffectualness of his father did nothing to hinder his latent homosexuality, and the disciplinary regime of the all-male School of Jurisprudence cannot have helped. There is, however, no evidence of his having given any active outlet to his secret desires. During these school days, desultory singing, piano and harmony lessons were all the musical education he received, complemented by increasingly numerous visits to the opera, which had a lasting influence on his musical taste.

Entry into the St. Petersburg Conservatory

He entered the newly founded St. Petersburg Conservatory of Music in 1862. His job as a clerk in the Ministry of Justice was hardly interesting enough to prevent his increasing absorption with music. A tale is told of his absentmindedly tearing pieces from an official document, munching at them steadily, and recovering his senses only to find that he had consumed them altogether. He soon left the government service and became a music student. His first orchestral score (composed, 1864), an overture based on Aleksandr Ostrovsky's play *The Storm*, is remarkable in showing many of the stylistic features later to be associated with his music and a youthful vulgarity that was not the only constituent in it to appal his primly Mendelssohnian teacher, Anton Rubinstein. Even so, he was offered in late 1865 a post as professor of harmony by Rubinstein's brother at the Moscow Conservatory.

Career. Tchaikovsky settled down comfortably in Moscow in January 1866, although he underwent a mental crisis as a consequence of overwork on his *Symphony No. 1 in G Minor (Winter Daydreams)*, Opus 13 (1866). His compositions of the late 1860s and early 1870s reveal a distinct affinity with the music of the nationalist group of composers in St. Petersburg, both in their treatment of folk song and in their harmonies deriving from a common link with Mikhail Glinka, the "father" of a Russian nationalist style. He corresponded with the leader of the group, Mily Balakirev, at whose suggestion he wrote a fantasy overture, *Romeo and Juliet* (1869). Tchaikovsky's intrinsic charm, testified to by many who knew him, is nowhere more apparent than in the nationalist comic opera *Vakula the Smith* (1874; first performed, 1876), which in its revised form, *Cherevichki (The Little Shoes)*, is of similar merit to another opera, *Sorochintsy Fair* (also based on one of Nikolay Gogol's Ukrainian tales), by the most original composer in the Petersburg group, Modest Mussorgsky. Tchaikovsky's opera, however, is much closer to Balakirev's own folkloric idiom than anything Mussorgsky ever wrote.

After a fleeting, but unsuccessful, love affair with Désirée Artôt, the prima donna of a visiting Italian opera company, he had only one further romantic relationship with a woman. In the mid-1870s, he had another nervous breakdown. One of the symptoms of this nadir in his life was almost hysterical activity in composition culminating in the *Symphony No. 4 in F Minor*, Opus 36 (1877), and the opera *Eugene Onegin* (1877–78) based on a poem by Pushkin, with whose heroine Tatyana he felt in such sympathy that when a former music student, Antonina Milyukova, became infatuated with him, threatening suicide should he reject her, he identified her in his mind with the cruelly spurned Tatyana and consented to marry her. He must have subconsciously known all along that an unconsummated marriage was hardly likely to be successful, but it was doubly unfortunate that his wife should have been a nymphomaniac who repelled him to such an extent that he made an abortive attempt at suicide. He now fully realized that in the eyes of society he was permanently to be a sexual outcast. He loved children but would never have any of his own. He was to live the rest of his life in frustration and loneliness alleviated only by occasional heavy drinking and by composition. Even the happy summers spent at his sister's house at Kamenka in the Ukraine were later spoiled by an overwhelming sense of guilt when he fell in love with her son, his young nephew "Bob" (Vladimir) Davydov.

Marriage

Meanwhile, he had begun late in 1876 an extraordinary correspondence with an admirer of his compositions, Nadezhda von Meck, a wealthy widow, who settled upon him an annuity sufficient to allow Tchaikovsky to give up his teaching post and devote himself entirely to composition. By her wish, the two never met. Their intimate correspondence was more revealing of her than of Tchaikovsky. Compelled by a necessity to be liked, he was always apt to write what he thought people wanted to read rather than what he really thought. The detailed program of his *Fourth Symphony*, which he made up especially for her, for example, is generally regarded with circumspection. He later averred that replying to her frequently effusive letters had become "irksome." All the same, this curious relationship apparently fulfilled a deeply felt psychological need for both, particularly for Tchaikovsky, whose wife, proving importunate even after a separation had been arranged, had to be bought off. The platonic relationship with Mme von Meck was much more to his taste.

Correspondence with Nadezhda von Meck

His attempts to justify to himself her generous annuity were the cause of his overproduction of the next few years, which included some of his drier compositions—the *Piano Sonata in G Major*, Opus 37 (1878), the orchestral *Suite No. 1 in D Minor*, Opus 43 (1878–79), music for the coronation of his patron the emperor Alexander III, and the first of his mature attempts to write a commercially successful opera, *The Maid of Orleans* (1878–79), for he never imagined that *Eugene Onegin* was dramatic enough in the "theatrical" sense to be a popular success. The years 1878 to 1881 also included

several major achievements: the sparkling *Violin Concerto in D Major*, Opus 35 (1878), and the popular *Serenade for Strings in C Major*, Opus 48 (1880); *Capriccio italien*, Opus 45 (1880), and the *1812 Overture*, Opus 49 (1880). *Onegin*, which was only a token success at its Moscow première, enjoyed great popularity in St. Petersburg because of the tsar's admiration. The *Manfred Symphony*, Opus 58, composed in 1885, not only called forth unstinted praise but showed in some of its histrionically despairing episodes the path that Tchaikovsky's life and music were to follow in the last years.

In 1885 he bought a house of his own at Maidanovo in the vicinity of Moscow, where he lived until the year before his death, when he moved into the house that is now the Tchaikovsky House Museum in the nearby town of Klin. He began to travel more in Russia, spending two particularly delightful vacations in the Caucasus, where he was enthusiastically feted at Tbilisi. He overcame an aversion to conducting, with successful performances of the newly revised *Vakula*, and in 1888 he undertook an important foreign tour, directing his own works in Leipzig (where he met the composers Johannes Brahms and Edvard Grieg), Hamburg, Berlin, Prague, Paris, and London. His music was well received everywhere.

The great foreign tour

This tour was the apex of Tchaikovsky's later life. From then on, in spite of the continuing success of many of his former compositions and the acclamation of new ones, including his second Pushkin opera, *The Queen of Spades*, and his favourite ballet, *The Sleeping Beauty* (first received coolly; both performed 1890), he was working his way toward another nervous breakdown. His major compositions, starting with *Symphony No. 5 in E Minor*, Opus 64 (1888), became more and more intense and emotional, filled with hysterical exaltation and neurotic despair.

Tchaikovsky went on further tours, including the United States and England, where he conducted his popular *Piano Concerto No. 1 in B Flat Minor*, Opus 23 (composed, 1874–75), in 1889 and his *Fourth Symphony* in 1893. In 1893 he was also awarded at Cambridge an honorary degree of doctor of music. These and other successes, including the tumultuous reception accorded to the suite he hastily made for concert performance from his *Nutcracker* ballet music (1892), did not alter the inexorable decline in his mental condition, which was aggravated in 1890 when Nadezhda von Meck suddenly ended both their correspondence and the annuity. From a financial standpoint, however, this hardly mattered because the royalties from *The Queen of Spades* covered the loss without difficulty, and he was by this time a recipient of a state pension. Tchaikovsky never forgave her for her behaviour, and the nature of the psychological wound it inflicted upon him can be judged by the fact that in the delirium of his last illness he repeated her name again and again in indignant tones.

His last work

Tchaikovsky completed his *Symphony No. 6 in B Minor*, Opus 74, which was his last and which he rightly regarded as a masterpiece, in August 1893. In October he conducted its first performance in St. Petersburg but was disappointed with its reception. Its novel slow finale could hardly have been expected to induce such applause as had greeted, only 1½ years before, the première of the lighter *Nutcracker* suite. Yet perversely, Tchaikovsky did expect it and was determined to make an issue of it with himself. Into this work, with its "secret" program, he had put his whole soul, and the public did not appreciate it. In spite of an epidemic of cholera in St. Petersburg and although he complained of feeling unwell, he drank a glass of unboiled water. He died of the disease on November 6. Whether or not he had already contracted the disease before he drank the water, the rumour was soon rife that he had really committed suicide as a result of the failure of his last symphony, whose very title, *Pathétique*, if nothing else, was enough to ensure instant notoriety in the context of the composer's mysterious death.

Assessment. No composer since Tchaikovsky has suffered more from changes of fashion or from the extremes of over- and undervaluation. On the one hand, he achieved an enormous popularity with a very wide audience, largely through his more emotional works; on the other, the almost hypnotic effect that he was able to induce led to serious questioning of his true musical quality. It appears plausible that time will add to, rather than diminish, his stature, if only because performances, recordings, and publications have disclosed that there are fine works of Tchaikovsky still to be discovered. He is certainly the greatest master of the classical ballet, demonstrated by *Swan Lake* (1877) and the symphonically conceived *Sleeping Beauty* (1890). The six symphonies may be variable in quality but all contain important music. The last three are deservedly famous, though to these should be added the neglected *Manfred Symphony*. The *First Piano Concerto* and the *Violin Concerto*, on the other hand, deserve a higher reputation than vehicles for virtuosity. Notable among his other orchestral works are the early *Romeo and Juliet Overture* and the exquisite *Serenade for Strings*. Of the operas, *Eugene Onegin* is a masterpiece and *The Queen of Spades* dramatically effective. His string quartets are excellent but his piano music is largely undistinguished. His numerous songs include several fine examples.

MAJOR WORKS

Theatre music

OPERAS: *Voyevoda* (first performed 1869); *Undine* (1869); *Oprichnik* (1874); *Vakula the Smith* (1876); *Eugene Onegin* (1879); *The Maid of Orleans* (1881); *Mazepa* (1884); *Cherevichki* (*The Little Shoes*, 1887; revised version of *Vakula the Smith*); *The Sorceress* (1887); *The Queen of Spades* (1890); *Iolanta* (1892).

BALLETS: *Swan Lake* (1877); *The Sleeping Beauty* (1890); *The Nutcracker* (1892).

Instrumental music

SYMPHONIES: Seven symphonies, including *No. 2 in C Minor* (*Little Russian*), op. 17 (composed 1872, revised 1879); *No. 3 in D Major*, op. 29 (1875); *No. 5 in E Minor*, op. 64 (1888); *No. 6 in B Minor* (*Pathétique*), op. 74 (1893); and the *Manfred*, op. 58, based on Byron's drama and unnumbered (1885).

SOLO AND ORCHESTRA (PIANO): Three concertos—*No. 1 in B Flat Minor*, op. 23 (1874–75); *No. 2 in G Major*, op. 44 (1879–80); and *No. 3 in E Flat Major*, op. 75 (1893; one movement only). (VIOLIN): *Concerto in D Major*, op. 35 (1878). (CELLO): *Variations on a Rococo Theme*, op. 33 (1876); *Pezzo capricioso*, op. 62 (1887).

OTHER ORCHESTRAL WORKS: Overture to Ostrovsky's play *The Storm*, op. 76 (1864); symphonic poem, *Fate*, op. 77 (1868); fantasy-overture, *Romeo and Juliet*, 3 versions (1869, 1870, and 1880); fantasy, *Francesca da Rimini*, op. 32 (1876); *Marche slave*, op. 31 (1876); *Serenade for Strings in C Major*, op. 48 (1880); *Capriccio italien*, op. 45 (1880); *1812 Overture*, op. 49 (1880); overture-fantasy, *Hamlet*, op. 67a (1888); suite from *The Nutcracker* ballet, op. 71a (1892); 3 orchestral suites.

Chamber music

Three string quartets; one trio; one sextet (*Souvenir de Florence*, op. 70; composed 1890–92); various pieces for violin and piano; various sets with the title "Pieces"; two sonatas.

Vocal music

SONGS: About 100 songs, including "Don Juan's Serenade," op. 38, no. 1 (1878); "Mid the Din of the Ball," op. 38, no. 3 (1878); "None but the Lonely Heart," op. 6, no. 6 (1869); "Why Did I Dream of You?" op. 28, no. 3 (1875).

VOCAL DUETS: Six duets (1880).

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(E.J.C.G.)

Teacher Education

While arrangements of one kind or another for the education of the young have existed at all times and in all societies, it is only recently that schools have emerged as distinctive institutions for this purpose on a mass scale, and teachers as a distinctive occupational category. Parents, elders, priests, and wise men have traditionally seen it as their duty to pass on their knowledge and skills to the next generation. As Aristotle put it, the surest sign of wisdom is a man's ability to teach what he knows. Knowing, doing, teaching, and learning were for many centuries, and in some societies are still today, indistinguishable from one another. For the most part the induction of the young into the ways of acting, feeling, thinking, and believing that are characteristic of their society has been an informal—if serious and important—process, accomplished chiefly by means of personal contact with full-fledged adults, by sharing in common activities, and by acquiring the myths, legends, and folk beliefs of the culture. Formal ceremonies, such as the puberty rite, marked the point at which it was assumed that a certain range of knowledge and skill had been mastered and that the individual could be admitted to full participation in tribal life. (Residual elements of such ceremonies remain in some modern arrangements; it has been seriously contended that the study of the Latin language in the Renaissance and post-Renaissance school can be interpreted as a form of puberty rite.) Even in the formally established schools of the Greek city-states and of the medieval world there was little separation between, on the one hand, the processes of organizing and setting down knowledge and, on the other, those of teaching this knowledge to others.

This does not mean that prior to the 19th century little attention was given to a training in teaching methods as distinct from "subjects." The great works of medieval scholasticism were essentially textbooks, designed to be used for the purpose of teaching. Today, as in the medieval world, methods of teaching and the organization of knowledge continue to be reciprocally influential. Nor are the problems that today surround the qualifications and certification of teachers wholly new. State, church, and local authorities everywhere have long recognized the importance of the teacher's work in maintaining or establishing particular patterns of social organization and systems of belief, just as radical and reformist politicians and thinkers have looked to the schools to disseminate their particular brands of truth. In medieval and post-Reformation Europe, for example, there was considerable concern with the qualifications and background of teachers, mainly but not entirely with reference to their religious beliefs. In 1559 Queen Elizabeth I of England issued an injunction that prohibited anyone from teaching without a license from his bishop, which was granted only after an examination of the applicant's "learning and dexterity in teaching," "sober and honest conversation," and "right understanding of God's true religion." Thus the certification of teachers and concern for their character and personal qualities are by no means new issues.

The importance of teacher education

What is new for most societies—European, American, African, and Asian—is the attempt to provide a substantial period of formal education for everyone and not just for the small proportion of the population who will become political, social, and religious leaders or for those few who possess surplus time and money for the purpose. Universal literacy, already achieved in most European and American and many Asian societies, has become the goal of all. In an increasing proportion of countries every child now proceeds automatically to secondary education; many remain at school until 16 or 18 years of age, and large numbers go on to some form of postsecondary education and training. The scale and variety of educational provision that all this requires makes the supply, education, training, and certification of an adequate number of teachers a worldwide issue of education policy and practice. In developed and developing countries alike, no factor is of greater importance in relation to the quantity and quality of education; it is significant that a substantial proportion of the budget of the United Nations Educational, Scientific and Cultural Organization (UNESCO) is devoted to the improvement of teacher preparation.

The term "teacher" in this article is used to mean those who work in schools providing education for pupils up to the age of 18. Thus, "teacher education" refers to the structures, institutions, and processes by means of which men and women are prepared for work in elementary and secondary schools. This includes preschool, kindergarten, elementary, and secondary institutions for children from the age of 2 or 3 to 18. (The education and training of lecturers and other staff members of technical colleges, polytechnics, universities, and other institutions of post-secondary education, both general and specialized, are treated in HIGHER EDUCATION.)

THE EVOLUTION OF TEACHER EDUCATION

Teacher education, as it exists today, can be divided into two stages, preservice and in-service. Preservice education includes all the stages of education and training that precede the teacher's entry to paid employment in a school. In-service training is the education and training that the teacher receives after the beginning of his career.

Early development. The earliest formal arrangements for teacher preparation, introduced in some of the German states during the early part of the 18th century, included both preservice and in-service training. A seminary or normal school for "young men who had already passed through an elementary, or even a superior school, and who were preparing to be teachers, by making additional attainments, and acquiring a knowledge of the human mind, and the principles of education as a science, and of its methods as an art" was set up in Halle in 1706. By the end of the century there were 30 such institutions in operation in Germany. Systematic training was linked to an equally systematic process of certification, control of teaching conditions, and in-service study. All public teachers were required to attend a series of meetings to extend their practical knowledge. Parochial conferences took place monthly in the winter, district conferences bimonthly in the summer, a circle conference twice a year, and a departmental conference annually. Each seminary was responsible for maintaining contact with all the teachers working within a six-mile radius, and some established "repetition courses" for experienced teachers who wanted to refresh and add to their knowledge.

The German normal school

Nineteenth-century developments in the United States, Britain, France, Belgium, and Japan owed much to the pattern that had been established in Germany. In France efforts were made after 1792 to set up a system of normal schools, and in 1808 Napoleon established the École Normale (later the École Normale Supérieure) to train teachers for the *lycées*. But it was not until after 1833 that a uniform system of *écoles normales* (initially only for male students) was created, and the normal-school systems of several countries date from the third decade of the century.

During the first 30 years of the 19th century, teacher preparation in the United States, Britain, and elsewhere was dominated by the monitorial methods introduced by Andrew Bell and Joseph Lancaster. In the simplest terms, the method involved a master instructing a number of senior pupils or "monitors," who then passed on their newly acquired knowledge to a larger number of pupils. Such methods were cheap, simple, and, it was widely believed, effective. They required a necessary emphasis upon facts, drill, repetition, mechanical learning, and ease of teaching. By 1820 there were 20 Lancastrian schools in the state of New York, where the system had official status until the middle of the century. With hindsight it is easy to condemn the monitorial system. At the time, when the supply of educated persons available and willing to teach in the elementary schools was severely limited, and when the public funds to employ them were in short supply, the system enabled a large number of children to achieve the minimum level of literacy on which future development could build. Just as the organization of knowledge characteristic of medieval times im-

Lancastrian schools

plied its own pattern of pedagogy, so the Lancastrian system embodied a distinctive approach to the process of teaching; one of the attractions of such systems is that they offer a built-in solution to the problem of reconciling what the teacher needs to know and the methods he should learn.

Among those who were unimpressed by the claims of the Lancastrian system was David Stow, who in 1834 founded the Glasgow Normal Seminary from which "trainers," as his graduates came to be called, went to schools in Scotland and many of the British colonial territories. In the United States, after an uncertain start, the Massachusetts Normal Schools founded by Horace Mann in the 1830s became a model for similar developments in Connecticut, Michigan, Rhode Island, Iowa, New Jersey, and Illinois. In England, churches and voluntary foundations were in process of establishing the first of the teacher training colleges. Australia began the organized preparation of teachers in the early 1850s. At this early stage certain issues were already emerging that were to remain alive for the next hundred years and that are to some extent still relevant today.

The needs of pupils and schools were beginning to advance beyond basic literacy. Human knowledge was becoming more diverse and scientific and was being organized into new disciplinary systems. Secondary education was expanding. The early inclusive pedagogic systems were falling into disfavour. The problem arose of reconciling the teacher's personal need for education with his professional need for classroom technique. There were other than purely pedagogic considerations involved; the inhibitions of class society in England, the demand for practicality in the United States, a fear of liberal agitation in France, the patriotic missionary role of the teacher in Japan—all tended to maintain an emphasis upon the practical techniques of school management and to limit the range and level of the elementary teacher's intellectual accomplishments to mastery of only such subject knowledge as was needed at the school level.

General education versus professional training

Some educators asserted that the curriculum of the normal school should be academic, on the ground that the future teacher needed nothing more than experience of conventional subjects soundly taught. Others argued that training should have a purely professional function, including only such subject knowledge as the teacher would need in his classroom work. Some advocates claimed that the liberal and professional elements could readily be harmonized or integrated. The work of Derwent Coleridge, principal of St. Mark's College, London, who admitted that he took his models not from the pedagogical seminaries of Germany but from the universities of Oxford and Cambridge, exemplified the attempt to introduce a larger element of general education into teacher preparation. Sir James Kay-Shuttleworth, founder of another London college, emphasized basic subject matter; he held that

> not merely the subjects of instruction, but also the methods of teaching the candidates, should be so ordered as to be in itself a preparation for their future vocation as teachers. On this account the oral instruction of classes in a Normal school is greatly to be preferred to any other mode.

In the United States, Horace Mann supported the value of a training in the "common branches" of knowledge, as a means of mental discipline. But the views of Derwent Coleridge, Kay-Shuttleworth, and Horace Mann, in common with those of many other educators of the time, reflected social as well as pedagogical considerations. Mann, it has been suggested, failed to recognize that the Prussian system that so impressed him was one that took lower class pupils and trained them as teachers of the lower classes—a system already under fire from German educators at the time that it was being used as a model for developments abroad.

Between 1870 and 1890, legislation was enacted in a number of countries to systematize and broaden the work of the normal schools. In Japan an ordinance of 1886 established higher normal schools providing a four-year course for boys and girls who had completed eight years of elementary education. A French law of 1879 established a nationwide system of colleges for training women primary teachers (*écoles normales d'institutrices*). In Russia a statute on teachers' seminaries was promulgated in 1870; within five years there were 34 such institutions, with nearly 2,000 students. A further statute in 1872 provided for institutes to train teachers for the new higher grade schools that were beginning to appear in the larger towns. In Scotland, the universities of Edinburgh and St. Andrews established chairs in education in 1876. In the United States a large number of universities had by 1895 set up education departments, and in some of them the preparation of teachers for work in the schools was beginning to be combined with systematic study and research in education processes.

Developments in American universities owed a great deal to the efforts of men such as Henry Barnard, who, as schools commissioner in Rhode Island from 1845 to 1849, stimulated a local interest in education that led to the creation of a department of education at Brown University. Barnard wrote an influential series of books on pedagogy and teacher education and later, as president of Columbia University, inspired Nicholas Murray Butler and others to found Teachers College in 1888. This soon became the foremost university school of education in the United States. It incorporated two schools as teaching laboratories, enrolling children from kindergarten to college age. As its "Announcement" of 1901 made clear, it was not restricted to any one level of professional preparation:

> The purpose of Teachers College is to afford opportunity, both theoretical and practical, for the training of teachers of both sexes for kindergartens and elementary and secondary schools, of principals, supervisors and superintendents of schools, and of specialists in various branches of school work, including normal schools and colleges.

Late 19th- and early 20th-century developments. Until about 1890 the "theoretical" elements in teacher preparation were of two kinds: the study of certain principles of teaching and school management, exemplified in the textbooks written by experienced schoolmen that were published in many countries during the second half of the 19th century; and instruction in "mental and moral philosophy," history of education, psychology, and pedagogics. Some of the most popular and influential works, such as Rosencrantz' *Philosophy of Education*, which was translated into English in the 1870s, made little distinction between philosophical and psychological data. But after 1890 psychology and sociology began to crystallize as more or less distinctive areas of study; students of education had a wider and more clearly structured range of disciplines to draw upon for their data and perspectives and to provide a "scientific" basis for their pedagogic principles.

Evolution of educational theory

In the middle years of the 19th century the ideas of the Swiss educator J.H. Pestalozzi and of the German Friedrich Froebel inspired the use of object teaching, defined in 1878 by Alexander Bain in his widely studied *Education as a Science* as the attempt

> to range over all the utilities of life, and all the processes of nature. It begins upon things familiar to the pupils, and enlarges the conceptions of these, by filling in unnoticed qualities. It proceeds to things that have to be learnt even in their primary aspect by description or diagram; and ends with the more abstruse operations of natural forces.

The work of these pioneers also led to a clearer recognition of the developmental needs and character of childhood. Later contributors to the corpus of ideas that underlie the processes of teacher education continued to provide philosophical, sociological, and psychological justification for particular views of the nature of education and of teaching, and also had a greater or lesser influence on the methods to be employed in classroom and school.

The work of the German philosopher Johann Friedrich Herbart (1776–1841) was of particular importance in this latter respect. Herbart wrote a number of pedagogical works during his teaching career at the universities of Göttingen and Königsberg. In the latter part of the 19th century, the study of education along Herbartian lines

became established in every European country, in America, and in Japan. Herbartianism offered a complete system—a philosophical theory, a set of educational aims, a rational psychology, and a pedagogy. Teaching, it held, should build on what the child already knows and should seek to inculcate, by the choice of appropriate materials, the highest moral character. It should be organized in accordance with the "five formal steps" of preparation, presentation, comparison, generalization, and application. The Herbartian doctrine rested as much upon the interpretation of his followers as upon the master's own works, and its influence was of relatively limited duration. Other ideas were coming to the fore, less direct and comprehensive than Herbart's but having greater impact upon the educational consciousness of the next half-century.

The influence of Darwinian evolutionary ideas upon pedagogy was very marked. To the extent that the evolutionary viewpoint emphasized the processes by which individuals become adapted to their environment, as in the teachings of the English philosopher Herbert Spencer, their influence was profoundly conservative. But evolutionary ideas were also embodied within the child development theories of the American psychologist G. Stanley Hall, who argued that the stages of individual growth recapitulated those of social evolution and therefore that the distinctive character and status of childhood must be respected. The American philosopher William James also included evolutionary notions in his psychology. James's emphasis, however, was not so much upon the processes by which individuals adapt as upon those through which they react creatively and positively with their circumstances, helping to shape and change these to meet their needs. James's formulation of associationism, the building up of useful habit systems, had implications for the study of learning that teacher educators were quick to recognize and that were made more significant by the later experiments of the American psychologist Edward L. Thorndike (1874–1949). Thorndike's work with animals stands at the beginning of a tradition that continues to the present day. The laws of learning that he formulated have for long been a staple of teacher training courses in many countries. Thorndike saw psychology as the basis of a genuinely scientific pedagogy, and claimed that "Just as the science and art of agriculture depend upon chemistry and botany, so the art of education depends upon physiology and psychology." He went on to argue, with a degree of confidence that rings strangely today, that

> A complete science of psychology would tell every fact about everyone's intellect and character and behavior, would tell the cause of every change in human nature, would tell the result which every educational force—every act of every person that changed any other or the agent himself—would have.

The greatest influence on teacher-training curricula in the United States and many other countries was exercised not by the experimental psychologists but by the pragmatist philosopher John Dewey. Dewey began with a conception of the nature of scientific method that he generalized into a specific pedagogical approach (popularized by others as the "project" method and, more recently, as inquiry-based learning). This he combined with a consideration of the nature of the child's interests and capacities for learning and life experience, the nature and claims of different types of subject matter, and the importance of democratic values in the social context of the school. Just as James's psychology gave back to the teacher and the school some of the influence on individual development that the interpreters of evolutionary adaptation had seemed to deny, so Dewey's notion of the school as the embodiment of community ideals and the spearhead of social reform lent a new importance to the processes of teacher education.

Conservative and progressive views

It is tempting to categorize these various perspectives as "conservative" or "progressive." The former stress the importance of subject matter and of standard methods of effective instruction: the need for regularity and order in the classroom and for means that will encourage children to apply themselves diligently to learning; the importance of the teacher as a subject-matter expert and as an exemplar of accepted morality; and the existence of objective standards of scholarship and achievement to which teachers and students alike should aspire. The progressives, on the other hand, emphasize a more child-centred approach, designed to build upon the natural interests and curiosity of the child: a flexible pattern of teaching and classroom organization recognizing individual differences in motivation, capacity, and learning style; a conception of the teacher as an organizer of children's learning rather than as an instructor; and the need to integrate the subject matter of different disciplines into topics and projects that have meaning in terms of the pupil's own experience.

Such conservative and progressive ideas have their roots in differing conceptions of the nature of man and society, of knowledge, and of the learning process. The differences are not new. The fortunes of the two perspectives tend to wax and wane in accordance with the times. Thus in the United States, fears of a loss of technological supremacy in the late 1950s encouraged conservative critics to point to the weaknesses of "child-centred" education. In the same way, anxieties about the meaninglessness of the education experienced by the poor, coupled with evidences of widespread alienation among the young, encouraged a revival of interest in progressive ideas in the early 1970s. Many educators, of course, do not fall into either the conservative or the progressive category but draw their ideas from various sources. There has been a tendency in many countries, however, for the curricula of teacher-preparing institutions to be identified with progressive educational ideas.

Many other ideas also influenced the curriculum and organization of teacher preparation during the last decade of the 19th and the first half of the 20th centuries. The dynamic psychology of Sigmund Freud and his early associates, the work of the Gestalt psychologists, the methods of measuring human abilities that were being developed in France, Great Britain, and the United States, the development of religious ideas in the Roman Catholic countries, the imposition of Marxist and Leninist ideologies in the Soviet Union—all of these in varying measure affected the normal schools, teachers' colleges and seminaries, and university departments of education. Such new ideas and systems of thought had their impact at three main levels.

The use of education in promotion of values

First, they influenced the nature of the social commitment that teacher-preparing institutions strove to instill in their students: commitment to the values of democracy and of opportunity in the United States, as exemplified in the writings of Dewey; to a sense of national purpose or patriotism, as in France, Germany, and Japan; to the pursuit of the socialist revolution, as in the post-tsarist Soviet Union; or to a religious outlook as manifested by Catholic doctrine in Italy, Spain, and Latin America.

Second, the philosophers, psychologists, and sociologists helped to redefine the teacher–pupil relationship. Whatever their differences of view, clear continuities are visible among them on such issues as the significance of the child's needs and interests, the weaknesses of the formal academic curriculum, and the nature of individual development.

Third, the new contributions affected the organization of learning through the measurement and assessment of abilities; the diagnosis of special learning problems; the placing of children in homogeneous age and ability groups by means of "tracking" and "streaming"; the emphasis on problem solving; and the project method. These changes, reflected both in the way in which teachers were trained and in the architecture and equipment of schools, transformed education for younger children in many countries during the first half of the 20th century.

Organization of teacher education in the 20th century. The educational doctrines that inspired, conceptualized, and legitimated this transformation themselves reflected other social, political, economic, demographic, and technological changes. Urbanization, the reduction of infant mortality, improvements in child health, the fact that families, individuals, and whole societies could afford

longer and better schooling, growth in the size of populations, greater capacity for control by central and local government, the availability of new kinds of educational apparatus and teaching aids—all these did much to shape the progress of teacher education during the decades after 1900.

Levels of teacher preparation

Among the countries of the world the arrangements for the preparation of teachers vary widely. In some countries "monitors" still receive short courses of training as their preparation to teach large classes of young children. In North America, and to an increasing extent in other developed countries, most teachers are university graduates who begin their teacher preparation after completing four to six years of secondary education. Between these extremes many other arrangements exist. At one level, which for present purposes might be called Normal School A, entry is prior to the usual age of completion of secondary education. Training is limited to the achievement of competence in teaching a range of the subjects taught at the primary level and does not last more than five years.

The second level, which may be called Normal School B, also begins prior to the age of completing secondary education, but usually after the "first certificate" at approximately age 16 or at the end of the period of compulsory schooling. This level provides combined courses of education and professional training, the former not necessarily limited to subjects taught at the primary level and extending beyond the usual age of completion of secondary education.

A third level, the college level, requires a full secondary education, usually ending at 18 but not necessarily with the same qualifications as are demanded of university entrants. Two- or three-year concurrent courses of general and professional education lead to the award of a teaching certificate, often valid for work in primary, intermediate, and lower secondary schools.

Finally, there is the university level, in which, after completing a full period of secondary education, the future teacher enters a multipurpose institution of higher education to follow three- to five-year courses of combined general education and professional training, the latter being either concurrent or consecutive, that lead to the award of a university degree and teaching qualification. Such qualification is considered valid for work at primary or secondary levels, or at both, according to the nature of the course followed.

Until the middle 1960s the normal-school pattern applied to students preparing for primary work in many European countries (Austria, Belgium, Spain, France, Italy, Iceland, The Netherlands, Switzerland, and Turkey), in Latin America, and in a number of Asian countries, although in many places there was more than one route to the attainment of qualified teacher status. The education and training of secondary school teachers was complicated by the general growth of secondary education for all. This encouraged the tendency to educate and train both primary and secondary teachers alongside one another in postsecondary colleges or in multipurpose universities. More recently there has been a widespread movement away from the types of training described here as Normal School A and B to the college and university patterns. But the fact that a country has adopted what has been called here the university pattern of training should not be taken to mean that all the institutions in which teachers are prepared are comparable to the pre-existing universities; some are devoted mainly to teacher preparation.

ISSUES AND PROBLEMS IN TEACHER EDUCATION

Elements of teacher education

In nearly all countries, courses of the Normal School B, college, and university categories contain three main elements. The first element is the study of one or more academic, cultural, or aesthetic subjects for the purpose both of continuing the student's own education and of providing him with knowledge to use in his subsequent teaching career. A second element is the study of educational principles, increasingly organized in terms of social science disciplines such as psychology, sociology, philosophy, and history. A third element consists of professional courses and school experience. Primary teachers may also receive instruction in the content and methods of subjects other than their own specialties that figure in the primary curriculum. In normal schools and colleges, and some universities, the three elements run parallel to one another, and the student is professionally committed from the outset of his course. Elsewhere, the study of educational processes and professional work (including school experience) may follow the completion of a period of academic study that the student has begun without any prior commitment to teaching as a career. There are still advanced countries where the possession of a university degree, without any qualification in education as such, is sufficient basis for the award of qualified teacher status. In England and Wales, for example, compulsory training for graduates, generally comprising two terms (six months) of professional and theoretical studies and a further three-month period of school experience, was scheduled to come into effect only in 1973.

General education. The sequencing, balance, content, and organization of general and specialist academic work, courses in education, and professional studies and teaching experience has been a subject of discussion since the earliest days of organized teacher education. The importance of the element of general education has been defended on various grounds. Sometimes such academic work may be highly specialized. Students in many colleges of education in England study only one principal subject, to which they devote about one-third of their total time, and teachers who graduate from universities have often pursued three-year courses for single-subject honours degrees. In the United States and elsewhere the academic element is broader, and the first two years of college or university work may embody a wide range of elective subjects from diverse disciplinary fields. Both patterns have their critics, the first because it produces narrow intellectual specialists, the second because it encourages dilettantism and inadequate depth. Where a pattern of electives is combined with a units/credits system, as in some universities in Japan and the United States, it is claimed that one result is an undesirable fragmentation of study and effort. In his influential *Education of American Teachers* (1963), James B. Conant recommended that half the course requirements of the four-year program of preparation for elementary teachers should be given over to general courses, a further quarter to an "area of concentration," and the remaining quarter to professional studies, including school experience. Prospective secondary teachers would spend still more time on the subjects they were preparing to teach, with less than 10 percent of their time devoted to practice teaching and special methods. Such a subject emphasis for secondary teachers can be found in many countries. In France the École Normale Supérieure still places freedom of study and the nurture of intellectual curiosity above questions of professional teacher training. Generally speaking, wherever there is a stress upon academic excellence and the achievement of high standards of scholarship, there is likely to be skepticism as to the claims of professional training for teaching. Oxford University had still not appointed a professor of education by the beginning of the 1970s.

In countries where technical or vocational education forms an important part of secondary school provision, there have sometimes been specialist institutions for the training of teachers for this work. Such teachers tend to have lower status than the secondary school staff who teach academic subjects, and efforts have been made to upgrade the position of the teacher of agricultural and industrial arts, home economics, and handicrafts. Nearly all the universities in England and Wales that now offer the bachelor of education degree for college of education students include technical subjects within their list of approved options.

The element of educational courses in the teacher preparation program has been the object of criticism from academic specialists, defenders of liberal culture, and practical-minded professional educators. The growing

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range of speculation and empirical data generated by the burgeoning social sciences, philosophy, and history, have provided a rich ore from which those responsible for teacher preparation mined the materials they needed for the construction and legitimation of their pedagogic systems and principles. But such borrowing has done little to establish any very coherent system of educational ideas, or to provide the basis for a systematic theory of teaching adequate to sustain the variety and complexity of teacher preparation programs. In his *Evolution of American Educational Theory* (1964), C.J. Brauner was forced to conclude that

> middleman theorists, inexpert as scholars, had naïvely striven for some impossible synthesis that would be at once faithful to scholarship, useful to the practitioner, intelligible to the populace and thus comprehensive as a discipline, workable as a general method, and defensible as a social institution.

The study of educational principles. There has been much dispute as to whether the study of educational principles is to be seen as part of the liberal element in the course, contributing to the teacher's general education and personal development, or whether it is properly an adjunct to the professional sequence, serving to illuminate and enrich students' method courses and practical work. Where it was well done, the study of the philosophy, sociology, and history of education and of educational psychology clearly served both ends and also provided an introduction to a systematic exploration of human conduct and affairs that was both educationally defensible and important in its own right. But all too often it was not well done. As the field of the social sciences grew, it became increasingly difficult for those employed in teacher-preparing institutions to keep pace. In some places, student teachers could follow courses in psychology, sociology, and so on given by recognized authorities in their respective disciplines, and in all countries there were some prominent social scientists who themselves took a close and direct interest in educational matters. But, given the large number of institutions responsible for teacher preparation and the fact that the majority of their staff were necessarily recruited for their teaching competence rather than for their high academic qualifications, much of the teaching of educational principles tended to become out-of-date and secondhand.

In recent years there has been a revival of interest in the social sciences as an integral feature of teacher-education programs. This is partly a recognition of the popularity of studies of this kind among students, partly a reflection of their relevance in a time of rapid social and educational change, and partly a function of the larger supply of qualified social scientists available to teach them. There is now also becoming available a substantial volume of research material on problems such as the dynamics and correlates of children's learning, language development, differences in individual educability and response to teaching, and social class and educational opportunity. In his 1929 lecture, "The Sources of a Science of Education," John Dewey saw the elements of such a science being drawn out of other natural and social sciences, organized in relation to problems defined by the educational process. These hopes are now closer to realization.

Practical training. Professional and practical studies constitute the third major element in the teacher-preparation program. "Teaching practice" has always been important, initially carried out in the model or demonstration school attached to the normal school or college, later in the schools of the neighbourhood, and more recently in a variety of school, college, and community settings. The model and demonstration school was frequently criticized for the unreality of its teaching settings; some model schools attached to universities tended to become academically oriented and ceased to play an experimental role. But if there are advantages in practicing in more typical schools, there are also difficulties in relating the variety of experience thus attained to the purpose and content of the college course, particularly when there are discrepancies between the methods and approaches taught in the colleges and those that the student encounters in the school. In some countries, experienced teachers view the work of teacher-preparing institutions with a certain amount of disdain. It is sometimes claimed that college and university staff lack the recent, firsthand experience of schools that is needed if training is to be fully effective. Efforts have been made to reduce the separation between school and college; these include the transfer of college staff to periods of classroom teaching and of experienced teachers to college work, dual appointment to a college and to a school where the "teacher-tutor" assumes responsibility for supervision of the student's school-based work, the involvement of teachers' organizations in the determination of national policy on teacher education, the involvement of individual teachers in the government and committee work of teacher-preparing institutions, and the use of periods of school-based teacher education in which a tutor and group of student teachers are attached to a school or a number of schools for an extended period of observation, practical teaching, and theoretical study. Courses are also being devised in which periods of education, training, and paid employment in schools alternate with one another to make up a four- or five-year program.

Model schools

APPOINTMENT PROCEDURES AND PROBATIONARY REQUIREMENTS

Certification

Generally speaking, in federal countries such as the United States, Canada, and Australia, each state or province sets its own requirements for certification, which inevitably do much to shape the content and organization of the teacher-education programs. The variety of such regulations often means that teachers who have received their education and training in one province or state are not qualified to teach in schools elsewhere without satisfying additional requirements. In other countries, such as England and France, requirements are determined on a national basis. Responsibility for recommending the granting of qualified teacher status may, however, be delegated. In England this responsibility is exercised by regional consortia of colleges, local educational authorities, universities, and teacher interests known as area training organizations that were established after 1944.

There are likewise considerable variations among countries in the way in which teachers are appointed to their first posts after graduation from college or university. In a small number of countries, students have a completely free choice among all the schools of the type in which their training qualifies them to teach, and they make their applications directly to the school in which they wish to serve. A more common pattern is that of appointment to the service of a local, state, or provincial authority, which then places the teacher in a school where a suitable vacancy exists. In some places there is a tendency for beginning teachers to be placed in schools in more remote or less desirable areas. In countries that have universal military service, such as Israel, it is sometimes possible for trained teachers to satisfy military requirements by being drafted to a school of the government's choice.

Another aspect of the diversity of certification requirements is the extent to which teachers are permitted to undertake work in subjects other than those they specialized in at college or university. Generally speaking, where national and state rules exist they tend to be interpreted liberally during periods of teacher shortage and more stringently as the supply of teachers improves; it is often possible for a teacher to secure the additional qualifications required to undertake a greater variety of work by taking university summer sessions or other kinds of in-service courses.

IN-SERVICE TRAINING

Training on the job involves more than courses, conferences, and other organized study programs. Such efforts belong to a much broader system of communication whereby all those who are involved in the educational enterprise—teachers, administrators, research workers, curriculum-development specialists, teacher trainers—keep in touch with one another and with developments in their respective fields. One must therefore consider the

media that are available for in-service education as well as institutional arrangements by means of which such training is provided.

Learning materials

Printed matter forms the most obvious kind of communication medium among teachers. In all countries there are both general and specialist educational journals and newspapers; educational bodies of various kinds issue their own newsletters, broadsheets, and bulletins. The volume of material published in this form has increased enormously. In some countries books, journal articles, and research reports are systematically abstracted and distributed, and some schools have their own library and information services.

A second group of media for in-service training includes lectures and related types of face-to-face instruction and discussion. Greater use is being made of seminars, working parties, discussions, and other group activities that require a higher level of individual participation. Case studies and simulation materials are used along with these methods. Among the advantages of such techniques are the high degree of personal involvement they encourage, the "realism" of the problems dealt with, a reduction in the didactic element (especially important in work with senior staff), and the opportunities for questions of theory and principle to arise in the discussion of actual teaching and administrative incidents.

Multimedia approaches to in-service studies are encouraged by closed-circuit and broadcast television facilities within individual school systems and local areas. The work that professional and specialist associations have long performed in bringing teachers together for the discussion of issues of mutual concern has been extended by such developments as the establishment of teachers' centres in Britain. These help to disseminate a wide range of new educational practices and ideas, including those that derive from the teacher-controlled Schools Council for Curriculum and Examinations. In North America, Australia, the United Kingdom, West Germany, and some other European countries, credit-bearing courses are available for teachers through broadcast television, radio, and correspondence tuition.

The use of a wider range of media has diversified the institutional settings in which in-service teacher education is provided. Universities, colleges, teachers' centres, and teachers' homes are among the places where teachers can pursue their education and seek to improve their qualifications. Given the larger number of teachers that are on the staffs of many schools, there is also scope for school-based in-service education. A new idea or principle may find more ready acceptance within a group of like-minded people than when it must make its way against the organizational conservatism of a particular school. Department discussions, staff working parties, and other forms of school-based meetings enable matters of curriculum and organization to be discussed in depth, facilitate the induction of younger members of the profession, and help to limit the isolation of the teacher within the classroom. School-based in-service education has the important merit of recognizing that there is a gap between the ideas, techniques, and approaches that teachers acquire as a result of their formal training and the application of these ideas and approaches within the social system of the school. With the growth of team teaching and interdisciplinary work, and the reinterpretation of the teacher's role as an organizer and manager of learning resources rather than a solo performer on the classroom stage, the importance of bridging this gap has become increasingly important.

FUTURE DEVELOPMENTS IN TEACHER EDUCATION

Coming decades are likely to see continuing development and change in teacher education. Postsecondary and higher education may soon reach between a third and a half of the population in many of the advanced countries of the world. Teachers must adjust to new developments in educational technology, the growth of human knowledge, and the problem of creating a relevant and appropriate curriculum from the enormous range of material available. There will be new understanding of how children develop and learn. As the patterns of authority in society continue to change, it is likely that there will be a greater recognition of the importance of moral and personal education in a world of pluralistic values and goals. All these factors will affect the ways in which teachers are educated and trained.

In all countries, whether or not any fundamental institutional changes are being contemplated, there are evidences of radical change in the structure of ideas and assumptions that underlie the preparation of teachers. But it is unlikely that any comprehensive pedagogical system resembling those of the 19th century will be introduced. No single theory of learning or teaching is likely to satisfy the great diversity of individual needs and societal arrangements.

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(W.Ta.)

Teaching Profession

Measured in terms of its members, teaching is the world's biggest profession. In the early 1980s it was estimated that there were 30,000,000 teachers throughout the world. Though their roles and functions vary from country to country, the variations are generally greater within a country than they are between countries.

Because the nature of the activities that constitute teaching depends more on the age of the persons being taught than on any other one thing, it is useful to recognize three subgroups of teachers: primary-school, or elementary-school, teachers; secondary-school teachers; and university teachers. These three subgroups had, in the early 1980s, an approximate worldwide ratio of 57 percent, 34 percent, and 9 percent, respectively. The proportions differ by country and continents; in North America, for instance, they were 45, 31, and 23; in the Soviet Union, 82, 7, and 11; and in Africa, 75, 21, and 4.

Characteristics of the profession

The entire teaching corps, wherever its members may be located, shares most of the criteria of a profession, namely (1) a process of formal training; (2) a body of specialized knowledge; (3) a procedure for certifying, or validating, membership in the profession; and (4) a set of standards of performance—intellectual, practical, and ethical—that are defined and enforced by members of the profession. Teaching young children and even adolescents could hardly have been called a profession anywhere in the world before the 20th century. It was, instead, an art or a craft in which the relatively young and untrained women and men who held most of the teaching positions "kept school" or "heard lessons" because they had been better than average pupils themselves. They had learned the art solely by observing and imitating their own teach

ers. Only university professors and possibly a few teachers of elite secondary schools would have merited being called members of a profession in the sense that medical doctors, lawyers, or priests were professionals; in some countries even today primary-school teachers may accurately be described as semiprofessionals. The dividing line is unprecise. It is useful, therefore, to consider the following questions: (1) What is the status of the profession? (2) What kinds of work are done? (3) How is the profession organized?

THE STATUS OF TEACHERS

Teaching enjoys average to high status, depending in part on the amount of study required to prepare for employment. Since this ranges from a relatively brief time to many years, the levels of social and economic status span a wide range.

The economic status. *Salaries.* The salaries of elementary- and secondary-school teachers have generally been relatively low, particularly before 1955, at which time they increased sharply in some countries. In industrialized nations at the beginning of the 20th century, teachers in this group were paid hardly more than semiskilled labourers. In Europe during these years they were relatively better off than they were in the United States, partly because many primary-school teachers in Europe were men, with families to support. In general, primary-school teachers who are women and have relatively little academic training for their jobs tend to receive low salaries. In Brazil in 1957, for instance, the average annual salary of a teacher—usually a woman—in the official state primary-school system was the equivalent of about $850. It was even less, only $231, in the locally financed municipal schools. Teachers may, and generally must, take other jobs or look after their families and homes concurrently. The poorest countries, in any case, still provide relatively low primary-teachers' salaries. In India, for example, poorly trained teachers in village schools are paid only one-tenth as much as teachers in select city schools; and even in commercially prosperous Japan, primary-school teachers are paid only about as much as a bank clerk, an office worker, or a salesperson working in a department store.

The history of teachers' salaries in the United States, which may be regarded as typical of a developed country, has been influenced by three successive factors: (1) the effects of a rising level of training; (2) the effects of a teacher shortage and the impact of collective bargaining; and (3) the effects of a teacher surplus. Studies made by the National Education Association reveal that the average salary of elementary- and secondary-school teachers in U.S. public schools was $3,010 in 1949–50, $4,350 in 1956–57, $7,129 in 1966–67, $16,001 in 1979–80. Between 1971 and 1980 the average pay of factory employees in the United States increased by 171 percent, while the average pay of teachers increased ony 65 percent. A decreasing birth rate, which began in the early 1960s, along with a period of general economic decline during the 1970s, resulted in fewer jobs for teachers. By the early 1980s teachers were in a weak position to bargain for increases in salaries.

When salaries are too low to provide what teachers regard as necessities, they add other jobs. Men are more likely to do this than women. In 1965–66, male municipal schoolteachers in the United States derived 84 percent of their total income from their salaries as teachers; 7 percent from summer employment; and 6 percent from "moonlighting," or working at a second job, during the school year. Working at a second job is much more frequent in countries in which the school day is less than seven hours or the teaching load (for secondary-school teachers) less than about 25 classes a week. In Brazil and other Latin-American countries, for example, where the average teaching load of a secondary-school teacher is about 12 classes a week, many teachers take two full-time teaching jobs, and some are forced to go beyond that to earn a living.

University salaries

The salaries of university teachers and others who teach in postsecondary institutions have traditionally been substantially higher than those of secondary-school teachers. This reflects the fact that university professors generally have spent more years in preparation for their work and are more highly selected. But in recent years university salaries have not increased as much as those of other teachers. Thus, again in the United States, the 1977–78 median salary of full-time teachers in four-year higher institutions was $17,846, only about 25 percent higher than the comparable figure for primary- and secondary-school teachers. Though these university salaries are among the highest of their kind in the world, they fall below the average incomes of medical doctors, dentists, lawyers, and engineers. Salaries in higher education in the Soviet Union are higher, in relation to other comparable occupations, than U.S. salaries. A teacher in a Soviet pedagogical institute (which trains schoolteachers), for example, is paid slightly more than an engineer who has completed a university course.

Fringe benefits and other advantages. Vacations and leaves of absence give a prized flexibility to teaching careers. One of the attractive things about teaching, for instance, is the long annual vacation, usually in summer, which can be used for recreation, for further study or training, or for earning more money.

Leaves of absence are also more frequent than in other occupations. The sabbatical leave is a widespread practice among universities and is even available in some school systems. Formerly a fully paid leave for study or research every seventh year, it is now often reduced to a fully paid leave for a half year or half-salary for a full year. Maternity leave is generally available to women teachers, and in the United States many teachers are provided with paid maternity leave. Sick leave and short-term leave for personal needs are also often provided—with continuing salary for teachers validly absent for a few days.

Other benefits are becoming quite common; some of them, such as pensions, have been in practice in Europe for many decades. Life and health insurance, another fringe benefit, is usually paid partly or wholly by the school system or the university.

Seniority rights, enjoyed by teachers in many school systems, give them preferential treatment in transfers to other schools and in class assignments within their system.

Social and occupational status. According to a number of sociological surveys, university professors generally rank high in public estimation, comparable to medical doctors, lawyers, owners of large business and industrial establishments, bankers, and officials of national government. On a scale ranging from 1 (high) to 7 (low), a university professor is ranked 1 in most countries and 2 in others. A secondary-school teacher is generally ranked 2 or 3 on the same scale, sharing the level with journalists, clergymen, business managers, accountants, insurance agents, real-estate or land agents, and substantial landowners. A primary-school teacher is generally ranked 3 or 4 on the 7-point scale, on the same level occupied by social workers, office managers, bank clerks, small independent farmers, and foremen.

Occupational status in the teaching profession is generally related to the degree of selection involved in obtaining the teaching post and to the amount of training necessary to qualify for it. In a country with a selective university-preparatory secondary school, such as, for instance, the *lycée* in France, the grammar school in England, and the *Gymnasium* in West Germany, teachers must have the equivalent of a university education and must pass rigorous examinations or selective screening. These teachers have a higher occupational status than teachers in other branches of secondary education, such as industrial or commercial schools, which are less selective and require less training and accept lower examination standards of their teachers. Whenever a secondary-school system is divided into a number of branches or types of schools, the teachers and the public both make status distinctions among them.

Throughout the period from about 1850 to 1925, when schooling was becoming universal in the more developed countries, the elementary-school, or primary-school, teacher had lower status than the teachers of the more

advanced schools. Still, there was a good deal of variation between countries. In Germany, for example, the primary-school teachers were more frequently men than women, and the male *Volksschullehrer* had relatively high status. If he taught in a rural school, he usually had a comfortable house adjoining the school and was above peasant landowners in social status. If he taught in a city, he could look forward to becoming the head teacher or school director. The German schoolteachers had a series of about seven status positions, from the classroom teacher in the primary school to the department chairman in the *Gymnasium*, or academic secondary school. The four- to six-year primary school was followed by a set of middle schools that were related to the occupational destiny of the student, and the middle schools were followed by a variety of higher secondary schools, some leading to employment and some to the university. Teachers were ranked in this sequence. Many *Gymnasium* teachers—that is, teachers of college-preparatory schools—were scholars of some distinction, almost with the same status as a university teacher. Oswald Spengler, for instance, with his broad-gauged historical writing (*The Decline of the West*), was a history teacher in a Hamburg *Gymnasium* and never a university professor.

In Japan the evolution of the teaching profession has been somewhat similar to that in Germany. Both countries traditionally have had more men than women teaching in elementary schools, and as late as 1964, only 22 percent of Japan's secondary-school teachers were women. Women were not encouraged to become teachers in Japan until after 1874, when the first Women's Normal School was founded. Both countries had several clearly marked status positions within each school level, depending on the amount of training and on seniority. The moral stature of Japanese teachers was regarded as an extremely important part of their qualification.

Status distinctions

Distinctions between primary- and secondary-school teaching die hard. In Europe and South America, for example, adolescent students training in normal schools to become primary-school teachers are generally addressed, referred to, and treated as children, while their counterparts in university preparatory schools are addressed as adults. Prospective primary-school teachers are normally called pupils and not students and are often addressed in the familiar forms of speech (*tu* or *Du* instead of *vous*, *usted*, or *Sie*) in contrast to university students.

In most modern countries, however, where the goal of universal schooling has been extended to the secondary level, distinctions in status between primary- and secondary-school teachers have moderated. In such situations, secondary-school teaching has becomes relatively less selective as additional teachers are sought for, at the same time that primary-school teachers have increased their training level and, therefore, their salary and status levels. In a growing number of countries, including West Germany, England, and the United States, primary-school teachers must have as much university-level training as secondary-school teachers, and a single salary scale has been established, based on the amount of training and years of experience. By 1981, for example, the average annual salary of primary-school teachers in U.S. public schools was about 95 percent of that of secondary-school teachers, indicating that the occupational status differential was being eliminated. France, on the other hand, still maintains two different systems of training and has different names for the primary-school teacher (*instituteur*) and the secondary-school teacher (*professeur*).

Whatever the status distinctions may be, the teaching profession in general is an important avenue of upward social mobility. Because teaching does not require capital, property, or family connection, it provides a good opportunity for the economic and social advancement of able and ambitious young people. A study of Chicago public-school teachers in 1964 indicated that approximately half of them had come from families of skilled, semiskilled, or unskilled workers (Robert J. Havighurst, *The Public Schools of Chicago: A Survey Report*, ch. 16, 1964). A study of the social origins of middle-school teachers in Brazil in 1963 showed that approximately half of them had moved up in social class as a result of becoming teachers (Robert J. Havighurst and Aparecida J. Gouveia, *Brazilian Secondary Education and Socio-Economic Development*, ch. 9, 1969).

Within the profession, the degree of status mobility is not great, at least in the primary and secondary schools. A classroom teacher is likely to remain a classroom teacher unless he or she seeks out an administrative post or follows some specialty, such as curriculum work, counselling, or the teaching of handicapped pupils. In university teaching, on the other hand, there is a hierarchy of three or four steps within any institution and of prestige and salary among institutions. Thus a university teaching career in the United States normally leads from the rank of instructor or assistant professor to associate professor and to full professor; in Britain the titles are assistant lecturer, lecturer, senior lecturer or reader, and professor; similar rankings occur in other countries.

Geographical mobility of teachers. The high mobility of university teachers within their country has been noted. They also move from one country to another with relative ease, so that the profession of university teaching has a cosmopolitan character unique among the professions. Most educators at this level belong to international professional organizations and tend to think of themselves as members of a worldwide profession.

For several reasons, there is less geographical mobility among primary- and secondary-school teachers. Because these teachers are licensed (whereas university teachers generally are not) they usually cannot secure a teaching job outside their own country, unless the receiving country has such a severe shortage of teachers that it seeks out immigrant teachers and gives them licenses to teach. Many African nations and India have, for this reason, a relatively large number of North American and European teachers. Language differences also interfere with geographical mobility.

Where there is a national system of state schools, as in France and England, teachers are licensed for the entire system and are able to move from one locality to another more easily than they can in countries in which there are multiple school systems organized on state or provincial lines. In the United States, where each of the 50 states has its own licensing laws and standards, teachers tend to be held within the state (though some states do have "reciprocity" with each other).

Stereotype of the teacher. The aphorism attributed to George Bernard Shaw, "He who can, does; he who cannot, teaches," appears to have wide credence among intellectuals and educated groups. Primary and secondary teaching are often seen as a refuge for mediocre people who are industrious but unimaginative and uncreative. Writing in the *Profession of Teaching* in 1901, a Boston educator, James P. Monroe, said:

> It is, indeed, the exceptional teacher—outside the faculties of colleges—who seriously looks upon himself as a professional man. The ordinary schoolmaster has little of the personal weight, of the sense of professional responsibility, of what may be called the corporate self-respect of the lawyer, the physician, or the engineer. The traditions of the teaching guild do not yet demand a wide education, a slow and laborious preparation, a careful and humble apprenticeship, such as are required for entrance into the really learned professions. A broad education and the poise of mind which follows it are the vital needs of a great majority of the public school teachers of today. They are ceaselessly complaining of a condition of things which is indeed grievous, but which is largely of their own creation. They demand high place without qualifying themselves to hold high place; they rebel at a not uncommon attitude of contempt or of contemptous toleration on the part of the public, but do not purge themselves of the elements which excite that contempt; they accuse the parents and the public of indifference toward their work, but do little to render that work of such quality as to forbid indifference.

More than 60 years later a professor of education at Utrecht in The Netherlands, Martinus J. Langeveld, taking a rather ambivalent position, quoted the director of a Swiss teacher-training college as saying, "The teaching profession is permeated with individuals who from youth upwards reveal the following characteristics: average

drive for power, average ambition, and escapism [*Lebensscheu*]." Langeveld discerned an occupational type, or stereotype, characterized on the one hand by lack of independence, social courage, and a limited social horizon, and on the other by industriousness, intellectual interest, achievement motivation, and a love for teaching children.

Whether or not this is to be given credence, it hardly applies to university teachers; and the events of the 1960s seemed to move teachers toward much more social and political action as a group and toward greater personal initiative.

One characteristic that no longer seems to be true is that teaching is a woman's profession. Though most industrialized countries have a preponderance of female teachers at the primary level, there are nearly equal numbers of male and female teachers in the world. The table shows estimates of the percentage of women teachers in the late 1970s for several countries and areas of the world.

Percentage of Woman Teachers

	elementary level	secondary level	higher education
United States	84	46	24
Soviet Union	71	*	50
Japan	57	26	13
Australia	71	45	*
Western Europe	69	48	37
Brazil	86	54	21†

*Official data not available. †1970 figure.
Sources: UNESCO, *Statistical Yearbook* (1981); U.S. Department of Education, *Digest of Education Statistics* (1981).

There is a good deal of variation in the sex ratio among teachers in European countries. In 1979 the percentage of primary-school teachers who were women in the United Kingdom, France, The Netherlands, and West Germany was 78, 65, 46, and 62, respectively. These percentages reflect the central European tradition of male teachers in the rural village schools.

Building the profession in a new country. Since World War II it has been necessary to create or to rebuild the teaching profession in a new country, under varying conditions. Sometimes it was an old country becoming modern, such as India and China; sometimes it was a tribal society becoming a nation, as in central Africa; and in one case it was a religious society becoming a modern nation, as in Israel. In all such cases, the pattern of schools has been copied from older countries, but the teaching personnel have to be drawn from the human resources available, and thus a wide variety of solutions to the problem of building the profession have been worked out.

In the case of Israel, there were 6,500 teachers in the school system in 1948, 31,700 in 1963, and 54,500 in 1980, while the school enrollment increased from 160,000 to 700,000 and 930,000 during the same years. Since the nation was building a modern economy from a very small beginning, labour was scarce, and especially educated labour. This made it difficult for the state to secure male teachers, since educated men were in high demand for other more prestigious work. Consequently, the great majority of new teachers were women; the military position of Israel after 1967 continued to make recruitment of male teachers difficult. Thus, the proportion of male teachers in the elementary and secondary schools was 49 percent in 1948, 41 percent in 1963, and only about 20 percent in 1980. The government has established a generous scholarship and loan program for prospective teachers and requires students who accept these stipends to teach at least five years. The Teachers' Association is the country's oldest trade union.

The evolution of the teaching profession in Hungary illustrates the problems of the teaching profession and their solution in a society that moves from capitalist to Communist rule after war and revolution. In the period from 1945 to 1950 there was a serious shortage of teachers at all levels, due to wartime loss of life and to flight of teachers and professors to the West. Before World War II most teachers were trained in institutions operated by the Roman Catholic Church. For the first five years after 1945 there were strenuous attempts to recruit new teachers and to retrain experienced teachers so that they could serve the purposes of the new society. The retraining program consisted of a two-year part-time course of lectures that stressed a "progressive-Marxist" political and economic ideology. There were 10,000 elementary- and secondary-school teachers in this program in 1950.

During the period from 1955 to 1967 there was a systematic upgrading of the training of elementary- and secondary-school teachers in Hungary, similar to what was being done in most countries. More university-level work was required. At the same time, recruiting was aimed at young people from the working class (50 percent of all university students were from peasant or working-class families during the 1950s). Secondary-school entrance became more general during the 1960s and 1970s, and the numbers of students entering secondary schools increased from 54 percent in 1960 to 72 percent in 1970 and 92 percent in 1981, with a corresponding increase of staff. During the period from 1960–1980 the number of secondary-school teachers increased from 8,800 to 15,460, a relatively low rate of growth that reflected Hungary's very small population growth.

The teaching profession in the Soviet Union. As in all other modern countries, the length of preparation for elementary-school and secondary-school teaching in the Soviet Union has expanded since 1920. Most new teachers have had four years of work in a university or pedagogical institute after completing the basic 10-year school of general education. Competition is intense for places in the universities and pedagogical institutes. About 70 percent of teachers in elementary and secondary schools are women, one of the highest proportions in any major country.

Teachers are paid for a 24-hour week of actual teaching time in elementary schools, and 18 hours in secondary schools. They are paid extra for overtime work, which includes correcting papers in some subjects, holding conferences, and visiting parents. Many teachers earn up to twice the basic salary by extra hours of teaching. In rural areas housing is furnished, including heating and lighting. After the age of 55, teachers may retire on a pension of 40 percent of the last salary received. They may draw the pension and continue to earn a regular salary if they want to continue teaching.

University faculty members have a high status, comparable to that of other professional groups. Their salaries place them among the highest paid workers; they also receive payment for lectures, articles, and books.

FUNCTIONS AND ROLES OF TEACHERS

Broadly speaking, the function of teachers is to help students learn by imparting knowledge to them and by setting up a situation in which students can and will learn effectively. But teachers fill a complex set of roles, which vary from one society to another and from one educational level to another. Some of these roles are performed in the school or university, and some are performed in the community.

Roles in the school or university
- Mediator of learning
- Disciplinarian or controller of student behaviour
- Parent substitute
- Confidant to students
- Judge of achievement
- Organizer of curriculum
- Bureaucrat
- Scholar and research specialist
- Member of teachers' organization

Roles in the community
- Public servant
- Surrogate of middle-class morality
- Expert in some area of knowledge or skills
- Community leader
- Agent of social change

In those areas in which teaching has not yet become a profession, the teacher may fill fewer of these roles. The

primary-school teacher in a simple agricultural society, for example, will fill only the first five of the school roles and the first and possibly the second of the community roles.

Some of the roles conflict; that is, the performance of one, that of disciplinarian, for example, tends to conflict with another, such as that of confidant to students, or the role of independent and creative scholar will tend to conflict with that of the bureaucrat. In the community, the role of surrogate of middle class morality tends to conflict with the role of agent of social change. In the presence of these role conflicts, the teacher must learn to balance, to know when and how vigorously to act in a particular role, and when to shift to another in a flexible way.

Role in curricular design. The family, the government, the church or religious authority, and the economic or business-industrial authority all have an interest in the development of children and youth, and all play a part, therefore, in setting up and controlling formal and many informal means of education. In the more developed societies, they employ teachers to do the work of education, and they work out with the teacher an understanding of what the teacher is expected to do. The more "professional" the teacher is, the more autonomy he demands and is given to teach within the concept of understood and mutually accepted goals and methods.

Teaching of skills, information, and attitudes

The elementary-school teacher must teach the basic mental skills—reading, writing, and arithmetic. Beyond this, the elementary-school teacher must teach facts and attitudes favourable to the nation or the church or any other institution supporting the school. Thus he must teach in a way that is favourable to Communism in the Soviet Union, to a mixed capitalist-socialist economy in Britain or the United States, to the French or Brazilian systems in France or Brazil, and so forth. In a society in which schools are directed by churches or religious groups, as in Spain, he must teach the relevant religious beliefs and attitudes.

In national and state systems of education, the legislature generally requires that certain subjects be taught so as to "improve" the citizenship or the morality or the health of the students. Many systems, for instance, require secondary schools to teach about the pitfalls of alcohol, drugs, and tobacco. A growing number of nations require teaching in favour of conservation of natural resources and protection of the physical environment against air and water pollution. Before World War II a central course required in the Japanese schools was "moral education." After the war, this was abolished by the American occupation forces on the grounds that it tended to inculcate a kind of authoritarianism and nationalistic ideology. With the ending of the military occupation, however, the Japanese government reintroduced a compulsory course in moral education, which became a source of major controversy between conservatives and progressives within the Japanese educational profession. The French school system also has a compulsory course in "civic morality."

Teaching freedom

Matters of curriculum and choice of textbooks and materials of instruction are determined in some countries with little or no participation of the individual teacher. Thus, in France, with a highly centralized national educational system, the course of instruction in the elementary schools is fixed by the Ministry of Education. In the United States, where each of the 50 states is its own authority, there is much more curricular variation. Some states require statewide adoption of textbooks, whereas others leave such matters to local decision. Many large city school systems have a curriculum department to set policy in such matters, and the individual teacher in a city school system or in certain state systems thus has relatively little power to decide what to teach. There is more flexibility at the secondary-school level than in the primary-school level. As for methods of teaching within the classroom, the individual teacher probably has more autonomy in the United States than in most European school systems.

The university teacher almost anywhere in the world has substantial autonomy in his choice of textbooks, of content to be covered in a particular course, and of methods of teaching. In general the only limits on the university teacher are set by the nature of his teaching assignment. If he is one of a number of teachers who teach a popular course, such as general chemistry or physics or history, which is taken by several hundred students and offered by several different instructors, he may have to use the same textbooks as those used by other instructors, and he may have to prepare his students for common examinations. On the other hand, in those courses that he alone gives, he has wide freedom to choose the content and methods of instruction.

In terms of the professional responsibility of teachers for what they teach, there is a major distinction between the university and elementary-secondary school systems. At the level of higher education, teachers have the power and the responsibility of defining the curriculum—its contents and its methods. This is the essence of academic freedom in higher education. The governing board of the university, whether it be a government or independent university, does not tell teachers what to teach or how to teach. There are, nevertheless, some external requirements operative on the university teacher. If he is preparing his students for examinations not under university control (civil service examinations, state bar and medical examinations, examinations for a certificate as a public accountant, or the like), his autonomy is limited by the necessity that his students be well prepared for these external examinations.

In contrast to the power of the university governing board, the board of an elementary- or secondary-school system has, but generally delegates to the school administration, the power to determine what is taught. The school administration, consisting of the superintendent, school directors, inspectors, and curriculum specialists, has effective power over the curriculum and brings the classroom teacher into the process as much or as little as it chooses. With the growth of teachers' unions and organizations, however, it appears that collective action by teachers is tending to increase the effective autonomy of the classroom teacher. Administrative and legislative prescriptions for the school curriculum are generally resisted in *principle* by the teaching profession; the profession presumes itself better able to decide what to teach and how to teach it.

The doctrine of in loco parentis. When minor children are entrusted by parents to a school, the parents delegate to the school certain responsibilities for their children, and the school has certain liabilities. In effect, the school and the teachers take some of the responsibility and some of the authority of the parents. The exact extent and nature of this responsibility and power vary from one society to another and from one school system to another. This is spelled out to some extent in the law, but much of it is determined by local custom and practice.

There is, of course, a relation between the age of the child on the one hand and the teacher's responsibility and liability for it on the other. The young child *must* obey the teacher, and the teacher may use the methods expected and tolerated in the community to control the child's behaviour. Furthermore, the child's physical safety is entrusted to the school and to the teacher, who thus become legally liable for the child's safety, insofar as negligence can be proved against them.

In the matter of corporal or physical punishment, local attitudes establish a wide range of expected and permissible behaviour on the part of the teacher. In most parts of the world, young children may be punished by a limited infliction of physical pain at the hands of the teacher or school principal, using a wooden ruler or a whip of one kind or another. But there are some systems and cities that explicitly bar a teacher from using corporal punishment. This seems most common in large cities; the teacher in a rural or small-city school is more apt to be expected to use physical measures for controlling pupil behaviour. As students become older, their behaviour is less apt to be controlled by physical measures, and they are more likely to be suspended from classes or expelled from school. This is the common last resort in the upper years of the secondary school and in the university.

Another facet of the doctrine of *in loco parentis* is seen

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