Knowledge, Attitudes, Skills

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Contents

Articles

Education 1
School 13
Student 21
Teacher 28
Professional development 38
Teacher education 40
Initial teacher education 46
Qualified Teacher Learning and Skills 46
Qualified Teacher Status 47
Teacher induction 49
Classroom 50
Learning 52
Secondary education 57
Course (education) 78
Lesson 80
Bloom's Taxonomy 82
Lesson plan 85
Knowledge 88
Skill 93
Attitude (psychology) 99

References

Article Sources and Contributors 104
Image Sources, Licenses and Contributors 108

Article Licenses

License 110

Education

Education in the largest sense is any act or experience that has a formative effect on the mind, character or physical ability of an individual. In its technical sense, education is the process by which society deliberately transmits its accumulated knowledge, skills and values from one generation to another.

A kindergarten classroom in Afghanistan.

Etymologically, the word education is derived from *educare* (Latin) "bring up", which is related to *educere* "bring out", "bring forth what is within", "bring out potential" and *ducere*, "to lead".[1]

Teachers in educational institutions direct the education of students and might draw on many subjects, including reading, writing, mathematics, science and history. This process is sometimes called schooling when referring to the education of teaching only a certain subject, usually as professors at institutions of higher learning. There is also education in fields for those who want specific vocational skills, such as those required to be a pilot. In addition there is an array of education possible at the informal level, such as in museums and libraries, with the Internet and in life experience. Many non-traditional education options are now available and continue to evolve.

An elementary classroom in Mexico.

A right to education has been created and recognized by some jurisdictions: since 1952, Article 2 of the first Protocol to the European Convention on Human Rights obliges all signatory parties to guarantee the right to education. At world level, the United Nations' International Covenant on Economic, Social and Cultural Rights of 1966 guarantees this right under its Article 13.

A lecture theater in New York City.

Systems of formal education

Education is the process by which people learn:

- **Instruction** refers to the facilitating of learning, usually by a teacher.
- **Teaching** refers to the actions of a real live instructor to impart learning to the student.
- **Learning** refers to learning with a view toward preparing learners with specific knowledge, skills, or abilities that can be applied immediately upon completion.

Primary education

Primary school in open air. Teacher (priest) with class from the outskirts of Bucharest, around 1842.

Primary (or elementary) education consists of the first 5–7 years of formal, structured education. In general, primary education consists of six or eight years of schooling starting at the age of five or six, although this varies between, and sometimes within, countries. Globally, around 89% of primary-age children are enrolled in primary education, and this proportion is rising.[2] Under the Education for All programs driven by UNESCO, most countries have committed to achieving universal enrollment in primary education by 2015, and in many countries, it is compulsory for children to receive primary education. The division between primary and secondary education is somewhat arbitrary, but it generally occurs at about eleven or twelve years of age. Some education systems have separate middle schools, with the transition to the final stage of secondary education taking place at around the age of fourteen. Schools that provide primary education, are mostly referred to as *primary schools*. Primary schools in these countries are often subdivided into infant schools and junior school.

Secondary education

In most contemporary educational systems of the world, secondary education comprises the formal education that occurs during adolescence. It is characterized by transition from the typically compulsory, comprehensive primary education for minors, to the optional, selective tertiary, "post-secondary", or "higher" education (e.g., university, vocational school for adults. Depending on the system, schools for this period, or a part of it, may be called secondary or high schools, gymnasiums, lyceums, middle schools, colleges, or vocational schools. The exact meaning of any of these terms varies from one system to another. The exact boundary between primary and secondary education also varies from country to country and even within them, but is generally around the seventh to the tenth year of schooling. Secondary education occurs mainly during the teenage years. In the United States, Canada and Australia primary and secondary education together are sometimes referred to as K-12 education, and in New Zealand Year 1-13 is used. The purpose of secondary education can be to give common knowledge, to prepare for higher education or to train directly in a profession.

The emergence of secondary education in the United States did not happen until 1910, caused by the rise in big businesses and technological advances in factories (for instance, the emergence of electrification), that required skilled workers. In order to meet this new job demand, high schools were created and the curriculum focused on practical job skills that would better prepare students for white collar or skilled blue collar work. This proved to be beneficial for both the employer and the employee, because this improvement in human capital caused employees to become more efficient, which lowered costs for the employer, and skilled employees received a higher wage than employees with just primary educational attainment.

In Europe, the grammar school or academy existed from as early as the 16th century; public schools or fee paying schools, or charitable educational foundations have an even longer history.

Higher education

The University of Cambridge is an institute of higher learning.

Higher education, also called tertiary, third stage, or post secondary education, is the non-compulsory educational level that follows the completion of a school providing a secondary education, such as a high school, secondary school. Tertiary education is normally taken to include undergraduate and postgraduate education, as well as vocational education and training. Colleges and universities are the main institutions that provide tertiary education. Collectively, these are sometimes known as tertiary institutions. Tertiary education generally results in the receipt of certificates, diplomas, or academic degrees.

Higher education includes teaching, research and social services activities of universities, and within the realm of teaching, it includes both the *undergraduate* level (sometimes referred to as tertiary education) and the *graduate* (or *postgraduate*) level (sometimes referred to as graduate school). Higher education generally involves work towards a degree-level or foundation degree qualification. In most developed countries a high proportion of the population (up to 50%) now enter higher education at some time in their lives. Higher education is therefore very important to national economies, both as a significant industry in its own right, and as a source of trained and educated personnel for the rest of the economy.

Adult education

Adult education has become common in many countries. It takes on many forms, ranging from formal class-based learning to self-directed learning and e-learning. A number of career specific courses such as veterinary assisting, medical billing and coding, real estate license, bookkeeping and many more are now available to students through the Internet.

Alternative education

Alternative education, also known as *non-traditional education* or *educational alternative*, is a broad term that may be used to refer to all forms of education outside of traditional education (for all age groups and levels of education). This may include not only forms of education designed for students with special needs (ranging from teenage pregnancy to intellectual disability), but also forms of education designed for a general audience and employing alternative educational philosophies and methods.

Alternatives of the latter type are often the result of education reform and are rooted in various philosophies that are commonly fundamentally different from those of traditional compulsory education. While some have strong political, scholarly, or philosophical orientations, others are more informal associations of teachers and students dissatisfied with certain aspects of traditional education. These alternatives, which include charter schools, alternative schools, independent schools, and home-based learning vary widely, but often emphasize the value of small class size, close relationships between students and teachers, and a sense of community.

Indigenous education

Increasingly, the inclusion of indigenous models of education (methods and content) as an alternative within the scope of formal and non-formal education systems, has come to represent a significant factor contributing to the success of those members of indigenous communities who choose to access these systems, both as students/learners and as teachers/instructors.

Process

Curriculum

An academic discipline is a branch of knowledge which is formally taught, either at the university, or via some other such method. Each discipline usually has several sub-disciplines or branches, and distinguishing lines are often both arbitrary and ambiguous. Examples of broad areas of academic disciplines include the natural sciences, mathematics, computer science, social sciences, humanities and applied sciences.[3]

Learning modalities

There has been work on learning styles over the last two decades. Dunn and Dunn[4] focused on identifying relevant stimuli that may influence learning and manipulating the school environment, at about the same time as Joseph Renzulli[5] recommended varying teaching strategies. Howard Gardner[6] identified individual talents or aptitudes in his Multiple Intelligences theories. Based on the works of Jung, the Myers-Briggs Type Indicator and Keirsey Temperament Sorter[7] focused on understanding how people's personality affects the way they interact personally, and how this affects the way individuals respond to each other within the learning environment. The work of David Kolb and Anthony Gregorc's Type Delineator[8] follows a similar but more simplified approach.

It is currently fashionable to divide education into different learning "modes". The learning modalities[9] are probably the most common:

- Visual: learning based on observation and seeing what is being learned.
- Auditory: learning based on listening to instructions/information.
- Kinesthetic: learning based on hands-on work and engaging in activities.

Although it is claimed that, depending on their preferred learning modality, different teaching techniques have different levels of effectiveness,[10] recent research has argued "there is no adequate evidence base to justify incorporating learning styles assessments into general educational practice."[11]

A consequence of this theory is that effective teaching should present a variety of teaching methods which cover all three learning modalities so that different students have equal opportunities to learn in a way that is effective for them.[12] Guy Claxton has questioned the extent that learning styles such as VAK are helpful, particularly as they can have a tendency to label children and therefore restrict learning.[13]

Teaching

Teachers need to understand a subject enough to convey its essence to students. While traditionally this has involved lecturing on the part of the teacher, new instructional strategies put the teacher more into the role of course designer, discussion facilitator, and coach and the student more into the role of active learner, discovering the subject of the course. In any case, the goal is to establish a sound knowledge base and skill set on which students will be able to build as they are exposed to different life experiences. Good teachers can translate information, good judgment, experience and wisdom into relevant knowledge that a student can understand, retain and pass to others. Studies from the US suggest that the quality of teachers is the single most important factor affecting student performance, and that countries which score highly on international tests have multiple policies in place to ensure that the teachers they employ are as effective as possible.[14] With the passing of NCLB in the United States (No Child Left Behind),

teachers must be highly qualified.

Technology

Technology is an increasingly influential factor in education. Computers and mobile phones are used in developed countries both to complement established education practices and develop new ways of learning such as online education (a type of distance education). This gives students the opportunity to choose what they are interested in learning. The proliferation of computers also means the increase of programming and blogging. Technology offers powerful learning tools that demand new skills and understandings of students, including Multimedia, and provides new ways to engage students, such as Virtual learning environments. One such tool are virtual manipulatives, which are an "interactive, Web-based visual representation of a dynamic object that presents opportunities for constructing mathematical knowledge" (Moyer, Bolyard, & Spikell, 2002). In short, virtual manipulatives are dynamic visual/pictorial replicas of physical mathematical manipulatives, which have long been used to demonstrate and teach various mathematical concepts. Virtual manipulatives can be easily accessed on the Internet as stand-alone applets, allowing for easy access and use in a variety of educational settings. Emerging research into the effectiveness of virtual manipulatives as a teaching tool have yielded promising results, suggesting comparable, and in many cases superior overall concept-teaching effectiveness compared to standard teaching methods. Technology is being used more not only in administrative duties in education but also in the instruction of students. The use of technologies such as PowerPoint and interactive whiteboard is capturing the attention of students in the classroom. Technology is also being used in the assessment of students. One example is the Audience Response System (ARS), which allows immediate feedback tests and classroom discussions.[15]

Information and communication technologies (ICTs) are a “diverse set of tools and resources used to communicate, create, disseminate, store, and manage information.”[16] These technologies include computers, the Internet, broadcasting technologies (radio and television), and telephony. There is increasing interest in how computers and the Internet can improve education at all levels, in both formal and non-formal settings.[17] Older ICT technologies, such as radio and television, have for over forty years been used for open and distance learning, although print remains the cheapest, most accessible and therefore most dominant delivery mechanism in both developed and developing countries.[18] In addition to classroom application and growth of e-learning opportunities for knowledge attainment, educators involved in student affairs programming have recognized the increasing importance of computer usage with data generation for and about students. Motivation and retention counselors, along with faculty and administrators, can impact the potential academic success of students by provision of technology based experiences in the University setting.[19]

The use of computers and the Internet is in its infancy in developing countries, if these are used at all, due to limited infrastructure and the attendant high costs of access. Usually, various technologies are used in combination rather than as the sole delivery mechanism. For example, the Kothmale Community Radio Internet uses both radio broadcasts and computer and Internet technologies to facilitate the sharing of information and provide educational opportunities in a rural community in Sri Lanka.[20] The Open University of the United Kingdom (UKOU), established in 1969 as the first educational institution in the world wholly dedicated to open and distance learning, still relies heavily on print-based materials supplemented by radio, television and, in recent years, online programming.[21] Similarly, the Indira Gandhi National Open University in India combines the use of print, recorded audio and video, broadcast radio and television, and audio conferencing technologies.[22]

The term "computer-assisted learning" (CAL) has been increasingly used to describe the use of technology in teaching.

Educational theory

Education theory is the theory of the purpose, application and interpretation of education and learning. Its history begins with classical Greek educationalists and sophists and includes, since the 18th century, pedagogy and andragogy. In the 20th century, "theory" has become an umbrella term for a variety of scholarly approaches to teaching, assessment and education law, most of which are informed by various academic fields, which can be seen in the below sections.

Economics

It has been argued that high rates of education are essential for countries to be able to achieve high levels of economic growth.[23] Empirical analyses tend to support the theoretical prediction that poor countries should grow faster than rich countries because they can adopt cutting edge technologies already tried and tested by rich countries. However, technology transfer requires knowledgeable managers and engineers who are able to operate new machines or production practices borrowed from the leader in order to close the gap through imitation. Therefore, a country's ability to learn from the leader is a function of its stock of "human capital".[24] Recent study of the determinants of aggregate economic growth have stressed the importance of fundamental economic institutions[25] and the role of cognitive skills.[26]

At the individual level, there is a large literature, generally related back to the work of Jacob Mincer,[27] on how earnings are related to the schooling and other human capital of the individual. This work has motivated a large number of studies, but is also controversial. The chief controversies revolve around how to interpret the impact of schooling.[28]

Economists Samuel Bowles and Herbert Gintis famously argued in 1976 that there was a fundamental conflict in American schooling between the egalitarian goal of democratic participation and the inequalities implied by the continued profitability of capitalist production on the other.[29]

History

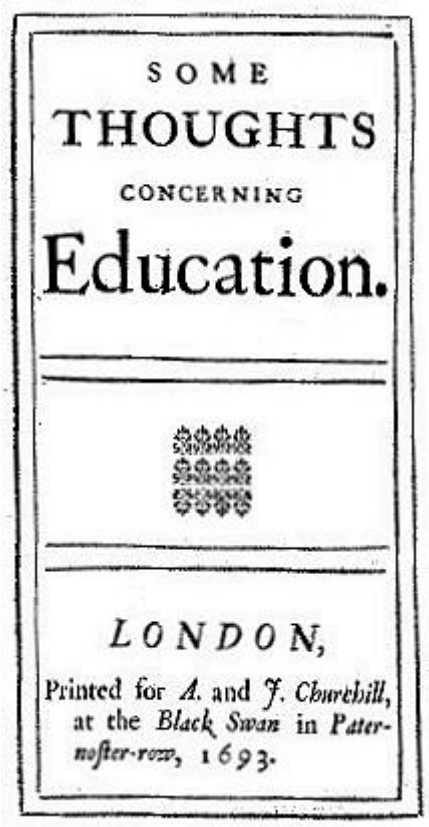
A depiction of the University of Bologna, Italy

The history of education according to Dieter Lenzen, president of the Freie Universität Berlin 1994, "began either millions of years ago or at the end of 1770". Education as a science cannot be separated from the educational traditions that existed before. Adults trained the young of their society in the knowledge and skills they would need to master and eventually pass on. The evolution of culture, and human beings as a species depended on this practice of transmitting knowledge. In pre-literate societies this was achieved orally and through imitation. Story-telling continued from one generation to the next. Oral language developed into written symbols and letters. The depth and breadth of knowledge that could be preserved and passed soon increased exponentially. When cultures began to extend their knowledge beyond the basic skills of communicating, trading, gathering food, religious practices, etc., formal education, and schooling, eventually followed. Schooling in this sense was already in place in Egypt between 3000 and 500BC.The history of education is the history of man as since its the main occupation of man to pass knowledge, skills and attitude from one generation to the other so is education.

Nowadays some kind of education is compulsory to all people in most countries. Due to population growth and the proliferation of compulsory education, UNESCO has calculated that in the next 30 years more people will receive formal education than in all of human history thus far.[30]

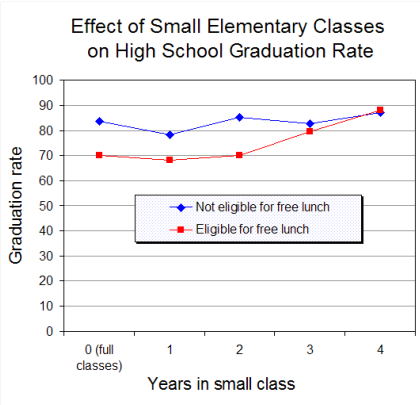
Philosophy

Philosophy of education is a "the philosophical study of education and its problems...its central subject matter is education, and its methods are those of philosophy".[31] As such, it is a field of applied philosophy. Drawing from fields of philosophy (metaphysics, epistemology, axiology, etc.) and its approaches (speculative, prescriptive, and/or analytic), philosophy of education seeks to address questions regarding the aims of education, education policy, and curriculum, as well as the process of learning, to name a few.[32] Put another way, philosophy of education is the philosophical study of the purpose, process, nature and ideals of education. For example, it might study what constitutes upbringing and education, the values and norms revealed through upbringing and educational practices, the limits and legitimization of education as an academic discipline, and the relation between educational theory and practice.


SOME
THOUGHTS
CONCERNING
Education.
LONDON,
Printed for A. and J. Churchill, at the Black Swan in Pater-noster-row, 1693.

John Locke's work *Some Thoughts Concerning Education* was written in 1693 and still reflects traditional education priorities in the Western world

Psychology



A class size experiment in the United States found that attending small classes for 3 or more years in the early grades increased high school graduation rates of students from low income families.[33]

Educational psychology is the study of how humans learn in educational settings, the effectiveness of educational interventions, the psychology of teaching, and the social psychology of schools as organizations. Although the terms "educational psychology" and "school psychology" are often used interchangeably, researchers and theorists are likely to be identified as educational psychologists, whereas practitioners in schools or school-related settings are identified as school psychologists. Educational psychology is concerned with the processes of educational attainment in the general population and in sub-populations such as gifted children and those with specific disabilities.

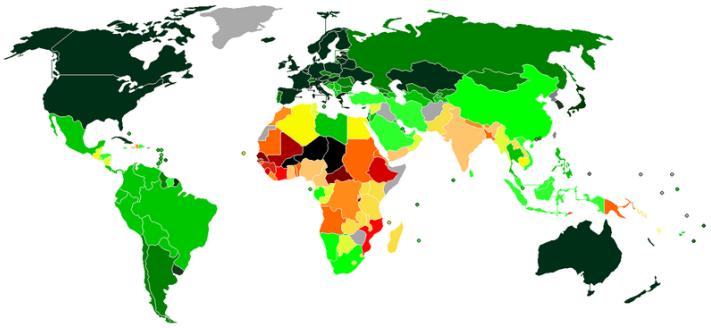
Educational psychology can in part be understood through its relationship with other disciplines. It is informed primarily by psychology, bearing a relationship to that discipline analogous to the

relationship between medicine and biology. Educational psychology in turn informs a wide range of specialities within educational studies, including instructional design, educational technology, curriculum development, organizational learning, special education and classroom management. Educational psychology both draws from and contributes to cognitive science and the learning sciences. In universities, departments of educational psychology are usually housed within faculties of education, possibly accounting for the lack of representation of educational psychology content in introductory psychology textbooks (Lucas, Blazek, & Raley, 2006).

Sociology

The sociology of education is the study of how social institutions and forces affect educational processes and outcomes, and vice versa. By many, education is understood to be a means of overcoming handicaps, achieving greater equality and acquiring wealth and status for all (Sargent 1994). Learners may be motivated by aspirations for progress and betterment. Education is perceived as a place where children can develop according to their unique needs and potentialities.[34] The purpose of education can be to develop every individual to their full potential. The understanding of the goals and means of educational socialization processes differs according to the sociological paradigm used.

Education in the Developing World



World map indicating Education Index (according to 2007/2008 Human Development Report)

In developing countries, the number and seriousness of the problems faced are naturally greater. People in more remote or agrarian areas are sometimes unaware of the importance of education. However, many countries have an active Ministry of Education, and in many subjects, such as foreign language learning, the degree of education is actually much higher than in industrialized countries; for example, it is not at all uncommon for students in many developing countries to be reasonably fluent in multiple foreign languages, whereas this is much more of a rarity in the supposedly "more educated" countries where much of the population is in fact monolingual.

Universal primary education is one of the eight Millennium Development Goals and great improvements have been achieved in the past decade, yet a great deal remains to be done.[35] Researchers at the Overseas Development Institute indicate the main obstacles to greater funding from donors include: donor priorities, aid architecture, and the lack of evidence and advocacy.[35] Additionally, Transparency International has identified corruption in the education sector as a major stumbling block to achieving Universal primary education in Africa.[36] Furthermore, demand in the developing world for improved educational access is not as high as one would expect as governments avoid the recurrent costs involved and there is economic pressure on those parents who prefer their children making money in the short term over any long-term benefits of education. Recent studies on child labor and poverty have suggested that when poor families reach a certain economic threshold where families are able to provide for their basic needs, parents return their children to school. This has been found to be true, once the threshold has been breached, even if the potential economic value of the children's work has increased since their return to school.

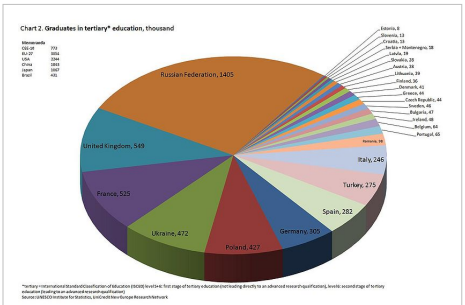
But without capacity, there is no development. A study conducted by the UNESCO International Institute for Educational Planning indicates that stronger capacities in educational planning and management may have an important spill-over effect on the system as a whole.[37] Sustainable capacity development requires complex

interventions at the institutional, organizational and individual levels that could be based on some foundational principles:

- national leadership and ownership should be the touchstone of any intervention;
- strategies must be context relevant and context specific;
- they should embrace an integrated set of complementary interventions, though implementation may need to proceed in steps;
- partners should commit to a long-term investment in capacity development, while working towards some short-term achievements;
- outside intervention should be conditional on an impact assessment of national capacities at various levels.

A lack of good universities, and a low acceptance rate for good universities, is evident in countries with a high population density. In some countries, there are uniform, over structured, inflexible centralized programs from a central agency that regulates all aspects of education.

- Due to globalization, increased pressure on students in curricular activities
- Removal of a certain percentage of students for improvisation of academics (usually practised in schools, after 10th grade)



Russia has more academic graduates than any other country in Europe.

India is now developing technologies that will skip land based phone and internet lines. Instead, India launched EDUSAT, an education satellite that can reach more of the country at a greatly reduced cost. There is also an initiative started by the OLPC foundation, a group out of MIT Media Lab and supported by several major corporations to develop a $100 laptop to deliver educational software. The laptops are widely available as of 2008. The laptops are sold at cost or given away based on donations. These will enable developing countries to give their children a digital education, and help close the digital divide across the world.

In Africa, NEPAD has launched an "e-school programme" to provide all 600,000 primary and high schools with computer equipment, learning materials and internet access within 10 years. Private groups, like The Church of Jesus Christ of Latter-day Saints, are working to give more individuals opportunities to receive education in developing countries through such programs as the Perpetual Education Fund. An International Development Agency project called nabuur.com [38], started with the support of former American President Bill Clinton, uses the Internet to allow co-operation by individuals on issues of social development.

Internationalization

Education is becoming increasingly international. Not only are the materials becoming more influenced by the rich international environment, but exchanges among students at all levels are also playing an increasingly important role. In Europe, for example, the Socrates-Erasmus Programme[39] stimulates exchanges across European universities. Also, the Soros Foundation [40] provides many opportunities for students from central Asia and eastern Europe. Programmes such as the International Baccalaureate have contributed to the internationalisation of education. Some scholars argue that, regardless of whether one system is considered better or worse than another, experiencing a different way of education can often be considered to be the most important, enriching element of an international learning experience.[41]

See also

For a topical guide to this subject, see Outline of Education.

- Academic dishonesty
- Adult education
- Alternative education
- Autodidacticism
- Behavior modification
- Classical education
- Classroom of the future
- Collaborative learning
- Comparative education
- Curriculum
- Curriculum studies
- Developmental Education
- Distance education
- Dropping out
- e-learning
- Education Day
- Education Index
- Education reform
- Educational animation
- Educational psychology
- Educational research
- Educational technology
- Entrepreneurship education
- Experiential education
- Gifted education
- Glossary of education-related terms
- Graduate education
- History of education
- Home schooling
- Indoctrination
- Instructional technology
- Language education
- Learning
- Learning 2.0
- Learning by teaching (LdL)
- Learning community
- Learning sciences
- Legal education
- Life skills
- Lifelong education
- Medical education
- MyEdu
- Online learning community
- Over-education
- Peace education

- Pedagogy
- Philosophy of education
- Public education
- Religious education
- Remedial education
- Residential education
- School
- School of the Future
- Single-sex education
- Socialization
- Sociology of education
- Special education
- Synchronous learning
- Taxonomy of Educational Objectives
- Teacher
- Tertiary education
- Traditional knowledge
- Tutoring
- University
- Virtual education
- Vocational education

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External links

- Education (http://www.dmoz.org/Reference/Education//) at the Open Directory Project
- Educational Resources (http://ucblibraries.colorado.edu/govpubs/us/edresour.htm) from *UCB Libraries GovPubs*
- UNESCO Institute for Statistics: International comparable statistics on education systems (http://stats.uis.unesco.org/ReportFolders/ReportFolders.aspx?CS_referer=&CS_ChosenLang=en)
- OECD education statistics (http://stats.oecd.org/Index.aspx?DataSetCode=RPERS)
- Planipolis: a portal on education plans and policies (http://planipolis.iiep.unesco.org/basic_search.php)
- IIEP Publications on Education Systems (http://www.iiep.unesco.org/information-services/publications/search-iiep-publications.html)

School

School building and recreation area in England

A **school** is an institution designed for the teaching of students (or "pupils") under the supervision of teachers. Most countries have systems of formal education, which is commonly compulsory. In these systems, students progress through a series of schools. The names for these schools vary by country (discussed in the *Regional* section below), but generally include primary school for young children and secondary school for teenagers who have completed primary education. An institution where higher education is taught, is commonly called a university college or university.

In addition to these core schools, students in a given country may also attend schools before and after primary and secondary education. Kindergarten or pre-school provide some schooling to very young children (typically ages 3–5). University, vocational school, college or seminary may be available after secondary school. A school may also be dedicated to one particular field, such as a school of economics or a school of dance. Alternative schools may provide nontraditional curriculum and methods.

There are also non-government schools, called private schools. Private schools may be for children with special needs when the government does not supply for them; religious, such as Christian schools, hawzas, yeshivas, and others; or schools that have a higher standard of education or seek to foster other personal achievements. Schools for adults include institutions of corporate training and Military education and training.

In homeschooling and online schools, teaching and learning take place outside of a traditional school building.

History and development of schools

Plato's academy, mosaic from Pompeii.

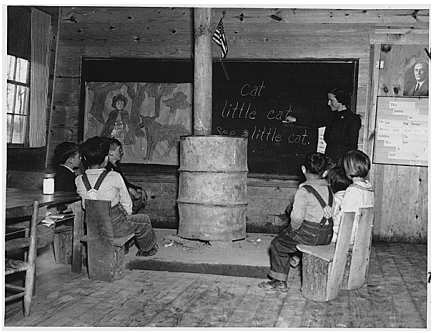
The concept of grouping students together in a centralized location for learning has existed since Classical antiquity. Formal schools have existed at least since ancient Greece (see Academy), ancient Rome (see Education in Ancient Rome) ancient India (see Gurukul), and ancient China (see History of education in China). The Byzantine Empire had an established schooling system beginning at the primary level. According to *Traditions and Encounters*, the founding of the primary education system began in 425 A.D. and "... military personnel usually had at least a primary education ...". The sometimes efficient and often large government of the Empire meant that educated citizens were a must. Although Byzantium lost much of the grandeur of Roman culture and extravagance in the process of surviving, the Empire emphasized efficiency in its war manuals. The Byzantine education system continued until the empire's collapse in 1453 AD.[1]

Islam was another culture that developed a school system in the modern sense of the word. Emphasis was put on knowledge, which required a systematic way of teaching and spreading knowledge, and purpose-built structures. At

first, mosques combined both religious performance and learning activities, but by the ninth century, the Madrassa was introduced, a proper school that was built independently from the mosque. They were also the first to make the *Madrassa* system a public domain under the control of the Caliph. The Nizamiyya madrasa is considered by consensus of scholars to be the earliest surviving school, built towards 1066 CE by Emir Nizam Al-Mulk.

Under the Ottomans, the towns of Bursa and Edirne became the main centers of learning. The Ottoman system of Kulliye, a building complex containing a mosque, a hospital, madrassa, and public kitchen and dining areas, revolutionized the education system, making learning accessible to a wider public through its free meals, health care and sometimes free accommodation.

The nineteenth century historian, Scott holds that a remarkable correspondence exists between the procedure established by those institutions and the methods of the present day. They had their collegiate courses, their prizes for proficiency in scholarship, their oratorical and poetical contests, their commencements and their degrees. In the department of medicine, a severe and prolonged examination, conducted by the most eminent physicians of the capital, was exacted of all candidates desirous of practicing their profession, and such as were unable to stand the test were formally pronounced incompetent.



One-room school in 1935, Alabama

In Europe during the Middle Ages and much of the Early Modern period, the main purpose of schools (as opposed to universities) was to teach the Latin language. This led to the term grammar school, which in the United States informally refers to a primary school, but in the United Kingdom means a school that selects entrants based on ability or aptitude. Following this, the school curriculum has gradually broadened to include literacy in the vernacular language as well as technical, artistic, scientific and practical subjects.

Many of the earlier public schools in the United States were one-room schools where a single teacher taught seven grades of boys and girls in the same classroom. Beginning in the 1920s, one-room schools were consolidated into multiple classroom facilities with transportation increasingly provided by kid hacks and school buses.

Mental Calculations. In the school of S.Rachinsky by Nikolay Bogdanov-Belsky. Russia, 1895.

Regional terms

The use of the term *school* varies by country, as do the names of the various levels of education within the country.

A madrasah in the Gambia

United Kingdom and Commonwealth of Nations

In the United Kingdom, the term *school* refers primarily to pre-university institutions, and these can, for the most part, be divided into pre-schools or nursery schools, primary schools (sometimes further divided into infant school and junior school), and secondary schools. Various types of secondary schools in England and Wales include grammar schools, comprehensives, secondary moderns, and city academies. In Scotland, while they may have different names, all Secondary schools are the same, except in that they may be funded by the state, or independently funded (see next paragraph). It is unclear if "Academys", which are a hybrid between state and independently funded/controlled schools and have been introduced to England in recent years, will ever be introduced to Scotland. School performance in Scotland is monitored by Her Majesty's Inspectorate of Education. Ofsted reports on performance in England and Wales.

In the United Kingdom, most schools are publicly funded and known as state schools or maintained schools in which tuition is provided free. There are also private schools or independent schools that charge fees. Some of the most selective and expensive private schools are known as public schools, a usage that can be confusing to speakers of North American English. In North American usage, a public school is one that is publicly funded or run.

In much of the Commonwealth of Nations, including Australia, New Zealand, India, Pakistan, Bangladesh, Sri Lanka, South Africa, Kenya, and Tanzania, the term *school* refers primarily to pre-university institutions.

Loyola School, Chennai, India - run by the Catholic Diocese of Madras. Christian missionaries played a pivotal role in establishing modern schools in India.

India

In ancient India, schools were in the form of Gurukuls. Gurukuls were traditional Hindu residential schools of learning; typically the teacher's house or a monastery. During the Mughal rule, Madrasahs were introduced in India to educate the children of Muslim parents. British records show that indigenous education was widespread in the 18th century, with a school for every temple, mosque or village in most regions of the country. The subjects taught included Reading, Writing, Arithmetic, Theology, Law, Astronomy, Metaphysics, Ethics, Medical Science and Religion.

Under the British rule in India, Christian missionaries from England, USA and other countries established missionary and boarding schools throughout the country. Later as these schools gained in popularity, more were started and some gained prestige. These schools marked the beginning of modern schooling in India and the syllabus and calendar they followed became the benchmark for schools in modern India. Today most of the schools follow the missionary school model in terms of tutoring, subject / syllabus, governance etc.with minor changes. Schools in India range from schools with large campuses with thousands of students and hefty fees to schools where children are taught under a tree with a small / no campus and are totally free of cost. There are various boards of schools in India, namely Central Board for Secondary Education (CBSE), Council for the Indian School Certificate Examinations (CISCE), Madrasa Boards of various states, Matriculation Boards of various states, State Boards of various boards, Anglo Indian Board, and so on. The typical syllabus today includes Language(s), Mathematics, Science - Physics, Chemistry, Biology, Geography, History, General Knowledge, Information Technology / Computer Science etc.. Extra curricular activities include physical education / sports and cultural activities like music, choreography, painting, theater / drama etc.

Europe

Chemistry lesson at a German Gymnasium, Bonn, 1988

In much of continental Europe, the term *school* usually applies to primary education, with primary schools that last between four and nine years, depending on the country. It also applies to secondary education, with secondary schools often divided between *Gymnasiums* and vocational schools, which again depending on country and type of school educate students for between three and six years. In Germany students graduating from Grundschule are not allowed to directly progress into a vocational school, but are supposed to proceed to one of Germany's general education schools such as Gesamtschule, Hauptschule, Realschule or Gymnasium. When they leave that school, which usually happens at age 15-19 they are allowed to proceed to a vocational school. The term school is rarely used for tertiary education, except for some *upper* or *high* schools (German: Hochschule), which describe colleges and universities.

North America and the United States

In North America, the term *school* can refer to any educational institution at any level, and covers all of the following: preschool (for toddlers), kindergarten, elementary school, middle school (also called intermediate school or junior high school, depending on specific age groups and geographic region), senior high school, college, university, and graduate school.

In the US, school performance through high school is monitored by each state's Department of Education. Charter schools are publicly funded elementary or secondary schools that have been freed from some of the rules, regulations, and statutes that apply to other public schools. The terms grammar school and *grade school* are sometimes used to refer to a primary school.

Universal terms

In many countries, Business Schools are colleges providing instruction in business, business administration, and management.

Boarding schools are schools where students live full-time amongst their peers in dormitories. Some boarding schools are separated by gender.

School ownership and operation

Many schools are owned or funded by states. Private schools operate independently from the government. Private schools usually rely on fees from families whose children attend the school for funding; however, sometimes such schools also receive government support (for example, through School vouchers). Many private schools are affiliated with a particular religion; these are known as parochial schools.

Components of most schools

A school entrance building in Australia

Schools are organized spaces purposed for teaching and learning. The classrooms, where teachers teach and students learn, are of central importance, but typical schools have many other areas, which may include:

- Cafeteria (Commons), dining hall or canteen where students eat lunch and often breakfast and snacks.
- Athletic field, playground, gym, and/or track place where students participating in sports or physical education practice
- Auditorium or hall where student theatrical and musical productions can be staged and where all-school events such as assemblies are held
- Office where the administrative work of the school is done
- Library where students consult and check out books and magazines and often use computers
- Specialized classrooms including laboratories for science education
- Computer labs where computer-based work is done and the internet accessed

School security

To curtail violence, some schools have added CCTV surveillance cameras. This is especially common in schools with excessive gang activity or violence.

The safety of staff and students is increasingly becoming an issue for school communities, an issue most schools are addressing through improved security. After mass shootings such as the Columbine High School massacre and the Virginia Tech incident, many school administrators in the United States have created plans to protect students and staff in the event of a school shooting. Some have also taken measures such as installing metal detectors or video surveillance. Others have even taken measures such as having the children swipe identification cards as they board the school bus. For some schools, these plans have included the use of door numbering to aid public safety response.

Other security concerns faced by schools include bomb threats, gangs, vandalism,[2] and bullying.[3]

Online schools/classes

Some schools offer remote access to their classes over the Internet. Online schools also can provide support to traditional schools, as in the case of the School Net Namibia. Some online classes provide experience in a class so that when you take it you have already been introduced to the subject and know what to expect, and even more classes provide High School/College credit allowing you to take the class at your own pace. Many online classes cost money to use but some are offered free.

Stress

As a profession, teaching has levels of Work-Related Stress (WRS)[4] that are among the highest of any profession in some countries, such as the United Kingdom. The degree of this problem is becoming increasingly recognized and support systems are being put into place.[5] [6] Teacher education increasingly recognizes the need to train those new to the profession to be aware of and overcome mental health challenges they may face.

Stress sometimes affects students more severely than teachers, up to the point where the students are prescribed stress medication. This stress is claimed to be related to standardized testing, and the pressure on students to score above average.[7] [8] *See Cram school*.

Discipline

Schools and their teachers have always been under pressure — for instance, pressure to cover the curriculum, to perform well in comparison to other schools, and to avoid the stigma of being "soft" or "spoiling" toward students. Forms of discipline, such as control over when students may speak, and normalized behaviour, such as raising a hand to speak, are imposed in the name of greater efficiency. Practitioners of critical pedagogy maintain that such disciplinary measures have no positive effect on student learning. Indeed, some argue that disciplinary practices detract from learning, saying that they undermine students' individual dignity and sense of self-worth—the latter occupying a more primary role in students' hierarchy of needs.

Etymology

The word *school* is from Greek σχολή *scholē*), originally meaning "leisure", and also "that in which leisure is employed".[9]

See also

- List of colleges and universities by country
- List of schools by country
- List of songs about school
- List of television series about school
- Music school
- School and university in literature
- School of the Future (disambiguation page)
- Schooliosis
- Student transport
- Teaching for social justice
- University-preparatory school
- Year-round school

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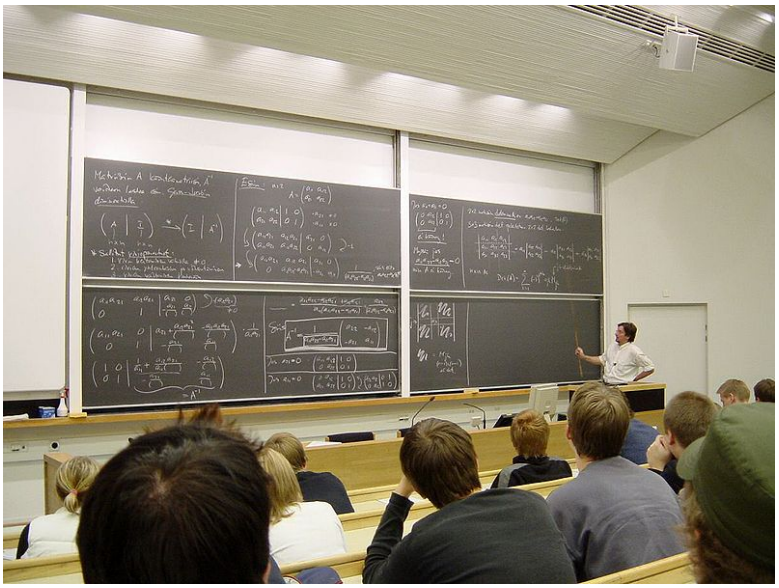
bjn:Sakulah

Student

A **student** is a learner, or someone who attends an educational institution. In some nations, the English term (or its cognate in another language) is reserved for those who attend university, while a schoolchild under the age of eighteen is called a **pupil** in English (or an equivalent in other languages). In its widest use, *student* is used for anyone who is learning.

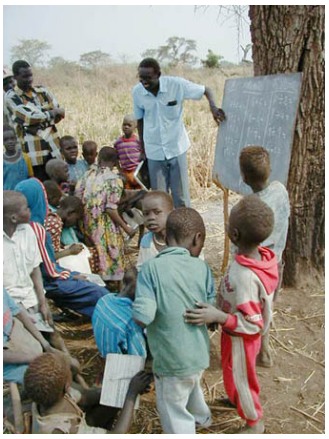


Students attending a lecture on linear algebra at the "Helsinki University of Technology"

International variations

Australia

In Australia, after kindergarten or preschool, children begin primary school, starting with 'grade prep' (in New South Wales the first year is called 'kindergarten', and in South Australia the first year is called 'reception') and continuing 'year one', 'year two' through to 'year six', except in Western Australia, South Australia and Queensland, where they go through to 'year seven'. They then move on to secondary school (also known as high school) for 'year seven' ('year eight' in Western Australia, South Australia and Queensland) through to 'year twelve'. After year twelve, students may pursue tertiary education at university or TAFE (technical and further education). Children in primary and secondary school are all referred to as students. The term *student* is used for all learners including those in primary school, secondary school, and university/TAFE.



Pupils in rural Sudan, 2002

Canada

In Canada, special terms are occasionally used. In English provinces, the high school (known as *academy* or *secondary school*) years can be referred to simply as *first, second, third, and fourth year*. Some areas call it by grade such as grade 10, grade 11, and grade 12. , Grades 9

Over one thousand pupils in uniform during an assembly at a secondary school in Singapore

through 12 are considered high school, with grades 1 through 6 called "elementary school" and grades 6 through 8 called "middle school" or "junior high school" in some provinces. In university, students are classified as first-, second-, third-, or fourth-year students. In some occasions, they can be called "senior ones", "twos", "threes", and "fours". The first week of university for first year students is commonly known as *Orientation week*.

Europe

Belgium

In Belgian universities, first-year students are called *schacht* in Dutch.

France

In French, a *bleu* or "bizuth" is a first-year student. Second-year students are often called "carré" (square). Some other terms may apply in specific schools, some depending on the classe préparatoire aux grandes écoles attended.

Germany

In Germany, the German cognate term "Student" is reserved for those attending a university. Colloquially, this is often shortened to "Studi". University freshmen are colloquially called *Erstis* ("firsties"). Different terms for school students exist, depending on which kind of school is attended by the student. Students attending a university preparatory school are called *Gymnasiasten*, while those attending other schools are called *Hauptschüler* or *Realschüler*. Students who graduate with the Abitur are called *Abiturient*. Those attending a university preparatory school may also be referred to with different terms depending on the grade level (see below).

Grade	German name of student in corresponding grade of "university-preparatory school" (Gymnasium)
Fifth	Sextaner
Sixth	Quintaner
Seventh	Quartaner
Eighth	Untertertianer
Ninth	Obertertianer
Tenth	Untersekundaner
Eleventh	Obersekundaner
Twelfth	Unterprimaner
Thirteenth	Oberprimaner

Ireland

In Ireland, pupils officially start with national school which consists of three years: junior infants, senior infants and first class (ages 5-7). They then advance to primary school, which consists of second class to sixth class (ages 8-12). After primary school, pupils proceed to the secondary school level. Here they first enter the junior cycle, which consists of first *year* to third year (ages 13-15). At the end of third year, all students must sit a compulsory state examination called the Junior Certificate. After third year, pupils have the option of taking a "transition year" or fourth year (usually at age 16). In transition year pupils take a break from regular studies to pursue other activities that help to promote their personal, social, vocational and educational development, and to prepares them for their role as autonomous, participative and responsible members of society. It also provides a bridge to enable pupils to make the transition from the more dependent type of learning associated with the Junior Cert. to the more independent learning environment associated with the senior cycle.

After the junior cycle pupils advance to the senior cycle, which consists of fifth year and sixth year (usually ages between 16 to 19). At the end of the sixth year a final state examination is required to be sat by all pupils, known as the Leaving Certificate. The Leaving Cert. is the basis for all Irish pupils who wish to do so to advance to higher education via a points system. A maximum of 600 points can be achieved. All higher education courses have a minimum of points needed for admission.

At university the term "fresher" is used to describe new students who are just beginning their first year.

At Trinity College Dublin under-graduate students are formally called "junior freshmen", "senior freshmen", "junior sophister" or "senior sophister", according to the year they have reached in the typical four year degree course. *Sophister* is another term for a sophomore, though the term is rarely used in other institutions and is largely limited to Trinity College Dublin. The term, "first year" is the more commonly used and connotation free term for students in their first year. The week at the start of a new year is called "Freshers' Week" or "Welcome Week", with a programme of special events to welcome new students. An undergraduate in the last year of study before graduation is generally known as a "finalist."

United Kingdom

In the past, the term "student" was reserved for people studying at university level in the United Kingdom. Children studying at school were called "pupils" or "schoolchildren" (or "schoolboys" or "schoolgirls"). However, the American English use of the word "student" to include pupils of all ages, even at elementary level, is now spreading to other countries, and is found in the UK (particularly in the state sector), as well as Australia and Singapore. In South Africa, the term "learner" is also used.

In England and Wales, teenagers who attend a college or secondary school for further education are typically called "sixth formers". If pupils follow the average pattern of school attendance, pupils will be in the "lower sixth" between the ages of 16 and 17, and the "upper sixth" between 17 and 18, however many schools still refer to them as "year 12" and "year 13" or "AS" and "A2". They "go up" to university after the upper sixth.

In Scotland, pupils sit Highers at the end of fifth year (when aged 16–17) after which it is possible for them to gain entry to university. However, many do not achieve the required grades and remain at school for sixth year. Even among those that do achieve the necessary grades it is common to remain at school and undertake further study (i.e. other subjects or Advanced Highers) and then start university at the same time as their friends and peers.

At universities in the UK, the term "fresher" is used informally to describe new students who are just beginning their first year. Although it is not unusual to call someone a fresher after their first few weeks at university, they are typically referred to as "first years" or "first year students". There is little derogatory connotation to this name in the UK, except for an occasional reference to "freshers" in a tone that implies naivety. More commonly, it will be used in a kindly fashion. For instance, a university official might ask a student if they are a fresher without any hint of a put down.

The ancient Scottish University of St Andrews uses the terms "bejant" for a first year (from the French "*bec-jaune*" – "yellow beak", "fledgling"). Second years are called "semi-bejants", third years are known as "tertians", and fourth years, or others in their final year of study, are called "magistrands".

In England and Wales, primary school begins with an optional "nursery" year followed by reception (similar to kindergarten) and then move on to "year one, year two" and so on until "year six". In state schools, children join secondary school when they are 11–12 years old in what used to be called "first form" and is now known as "year 7". They go up to year 11 (formerly "fifth form") and then join the sixth form, either at the same school or at a separate sixth form college. A student entering a private, fee-paying school (usually at age 13) would join the "third form" — equivalent to year 9. Many schools have an alternate name for first years, some with a derogatory basis, but in others acting merely as a description — for example "shells" (non-derogatory) or "grubs" (derogatory).

In Northern Ireland and Scotland, it is very similar but with some differences. Pupils start off in nursery or reception aged 3 to 4, and then start primary school in "P1" (P standing for primary) or year 1. They then continue primary school until "P7" or year 7. After that they start secondary school at 11 years old, this is called "1st year" or year 8 in Northern Ireland, or "S1" in Scotland. They continue secondary school until the age of 16 at "5th year", year 12 or "S5", and then it is the choice of the individual pupil to decide to continue in school and (in Northern Ireland) do AS levels (known as "lower sixth") and then the next year to do A levels (known as "upper sixth"). In Scotland, students aged 16-18 take Highers, followed by Advanced Highers. Alternatively, pupils can leave and go into full time employment or to start in a technical collage.

Large increases in the size of student populations in the UK and the effect this has had on some university towns or on areas of cities located near universities have become a concern in the UK since 2000. A report by Universities UK, "*Studentification: A Guide to Opportunities, Challenges and Practice*" (2006) has explored the subject and made various recommendations.[1] A particular problem in many locations is seen as the impact of students on the availability, quality and price of rented and owner-occupied property.

North America

United States

In the United States, the first official year of schooling is called kindergarten, hence the students are kindergarteners. Kindergarten is optional in most states, but few students skip this level. Pre-kindergarten, also known as "preschool" is becoming a standard of education as academic expectations for the youngest students continues to rise. Many public schools offer pre-kindergarten programs.

There are 12 years of mandatory schooling. The first eight are solely referred to by numbers (e.g. 1st grade, 5th grade) so students may be referred to as 1st graders, 5th graders, etc. Grades 9 through 12 (high school) have alternate names for students, namely freshman, sophomore, junior and senior.

Students inside a classroom at a college.

Before first year

Some high schools and tertiary institutions use the term "prefrosh" or "pre-frosh" to describe their newly admitted students. Schools often offer a campus preview weekend for prefroshes to know the schools better. Students are considered prefroshes until they register for the first class.

First year

A freshman (slang alternatives that are usually derogatory in nature include "fish", "new-g", "fresher", "frosh", "newbie", "freshie", "snotter", "fresh-meat", etc.) is a first-year student in college, university or high school. The less-common gender-neutral synonym "first-year student" exists; the variation "freshperson" is rare.

In many traditions there is a remainder of the ancient (boarding, pre-commuting) tradition of fagging. The student may also be subjected to a period of hazing or ragging as a pledge(r) or rookie, especially if joining a fraternity/sorority or certain other clubs, mainly athletic teams. For example, many high schools have initiation methods for freshmen, including, but not limited to, Freshman Duct-taped Throw, Freshman races, Freshman Orientation, Freshman Freshening (referring to poor hygiene among freshmen), and the Freshman Spread.

Even after that, specific rules may apply depending on the school's traditions (e.g., wearing a distinctive beanie), non-observance of which may result in punishment in which the paddle may come into play.

Second year

In the U.S., a sophomore is a second-year student. Folk etymology has it that the word means "wise fool"; consequently "sophomoric" means "pretentious, bombastic, inflated in style or manner; immature, crude, superficial" (according to the *Oxford English Dictionary*). It appears to be most likely formed from Greek "*sophos*", meaning "wise", and "*moros*" meaning "foolish", although it may also have separately originated from the word "sophumer", an obsolete variant of "sophism"[2] . Outside the USA the term "sophomore" is rarely used, with second-year students simply called "second years". The term "sophomore" is hardly known in Great Britain.

Academic procession during the University of Canterbury graduation ceremony

Post-second year

In the USA, a "junior" is a student in the penultimate (usually third) year and a "senior" a student in the last (usually fourth) year of college, university, or high school. A college student who takes more than the normal number of years to graduate is sometimes referred to as a "super senior".[3] The term "underclassman" is used to refer collectively to freshmen and sophomores, and "upperclassman" to refer collectively to juniors and seniors, sometimes even sophomores. The term "middler" is used to describe a third-year student of a school (generally college) that offers five years of study. In this situation, the fourth and fifth years would be referred to as "junior" and "senior" years, respectively.

Jamaica

In Jamaica, space was limited so the school would be used in turns with younger children starting at eight o'clock in the morning and finishing at two thirty in the afternoon, followed by the older children starting at two thirty in the afternoon and finishing at six o'clock in the evening. Children start to attend school when they are two years old. Primary school is known as elementary school. Advancement through grades is based on skills and learning speed; some students finish and graduate at sixteen years old.

Mature students

A mature, non-traditional, or adult student in tertiary education (at a university or a college) is normally classified as an (undergraduate) student who is at least 21–23 years old at the start of their course and usually having been out of the education system for at least two years. Mature students can also include students who have been out of the education system for decades, or students with no secondary education. Mature students also make up graduate and postgraduate populations by demographic of age.

Student pranks

University students have been associated with pranks and japes since the creation of universities in the Middle Ages.[4] [5] [6] [7] [8] These can often involve petty crime, such as the theft of traffic cones and other public property,[9] or hoaxes. It is also not uncommon for students from one school to steal or deface the mascot of a rival school.[10] In fact, pranks play such a significant part in student culture that numerous books have been published that focus on the issue.[11] [12] Pranks may reflect current events,[13] be a form of protest or revenge, or have no other purpose than for the enjoyment of the prank itself.

Other terms

- Students who are repeating a grade level of schooling due to poor grades are sometimes referred to as having been "held back" or "kept back". In Singapore they are described as "retained". In Philippines they are called as "repeater".
- The term pupil (originally a Latin term for a minor as the ward of an adult guardian etc.) is used in Commonwealth primary and secondary schools (mainly in England and Wales) instead of "student", but once attending higher education such as sixth-form college etc., the term "student" is standard.
- The United States military academies use only numerical terms, except there are colloquial expressions used in everyday speech. In order from first year to fourth year, students in these institutions are officially referred to as "fourth-class", "third-class", "second-class", and "first-class" cadets or midshipmen. Unofficially, other terms are used, for example at the United States Military Academy, freshmen are called "plebes", sophomores are called "yearlings" or "yuks", juniors are called "cows", and seniors are called "firsties". Some universities also use numerical terms to identify classes; students enter as "first-years" and graduate as "fourth-years" (or, in some cases, "fifth-years", "sixth-years", etc.).
- In the United States a "gunner" is an overly competitive student, typically in law school or medical school. A gunner is also overly ambitious and often excitedly volunteers oral answers in class that are, by turns, incorrect, off-topic, or specifically designed to demonstrate the questionable "intellectual" prowess of the person supplying them. A gunner compromises peer relationships to obtain recognition and praise from instructors and superiors, often by directly harming or attempting to harm the academic well-being of said peers.[14]

Idiomatic use

"Freshman" and "sophomore" are sometimes used figuratively, almost exclusively in the United States, to refer to a first or second effort ("the singer's *sophomore* album"), or to a politician's first or second term in office ("freshman senator") or an athlete's first or second year on a professional sports team. "Junior" and "senior" are not used in this figurative way to refer to third and fourth years or efforts, because of those words' broader meanings of "younger" and "older." A junior senator is therefore not one who is in a third term of office, but merely one who has not been in the Senate as long as the other senator from their state. Confusingly, this means that it is possible to be both a "freshman Senator" and a "senior Senator" simultaneously: for example, if a Senator wins election in 2008, and then the other Senator from the same state steps down and a new Senator elected in 2010, the former Senator is both senior Senator (as in the Senate for two years more) and a freshman Senator (since still in the first term).

See also

- Student accommodation
- Student activism
- Freshman fifteen
- International student
- Student orientation
- Sophomore
- Student resources
  - Guidance Counseling
  - Homework help service
  - Student financial aid
  - Study skills
  - Tutoring
- Studentification
- University student retention

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Teacher

Teacher

Classroom at a secondary school in Pendembu, Sierra Leone.

Occupation	
Names	Teacher, Educator, Lecturer
Type	Profession
Activity sectors	Education
Description	
Competencies	Teaching abilities, pleasant disposition, patience
Education required	Teaching certification
Fields of employment	Schools
Related jobs	Professor, academic, lecturer, tutor

Jewish children with their teacher in Samarkand, the beginning of the 20th century.

In education, a **teacher** (or, in the US, **educator**) is a person who provides schooling for pupils and students. A teacher who facilitates education for an individual student may also be described as a personal tutor. The role of teacher is often formal and ongoing, carried out by way of occupation or profession at a school or other place of formal education. In many countries, a person who wishes to become a teacher must first obtain professional qualifications or credentials from a university or college. These professional qualifications may include the study of pedagogy, the science of teaching. Teachers may have to continue their education after they qualify. Teachers may use a lesson plan to facilitate student learning, providing a course of study which is called the curriculum. A teacher's role may vary among cultures. Teachers may provide education instruction in literacy and numeracy, craftsmanship or vocational training, the Arts, religion or spirituality, civics, community roles, or life skills. In some countries, formal education can take place through home schooling.

Informal learning may be assisted by a teacher occupying a transient or ongoing role, such as a parent or sibling or within a family, or by anyone with knowledge or skills in the wider community setting.

Religious and spiritual teachers, such as gurus, mullahs, rabbis pastors/youth pastors and lamas may teach religious texts such as the Quran, Torah or Bible.

Professional educators

Teaching may be carried out informally, within the family which is called home schooling (see Homeschooling) or the wider community. Formal teaching may be carried out by paid professionals. Such professionals enjoy a status in some societies on a par with physicians, lawyers, engineers, and accountants (Chartered or CPA).

A teacher's professional duties may extend beyond formal teaching. Outside of the classroom teachers may accompany students on field trips, supervise study halls, help with the organization of school functions, and serve as supervisors for extracurricular activities. In some education systems, teachers may have responsibility for student discipline.

Around the world teachers are often required to obtain specialized education, knowledge, codes of ethics and internal monitoring.

There are a variety of bodies designed to instill, preserve and update the knowledge and professional standing of teachers. Around the world many governments operate teacher's colleges, which are generally established to serve and protect the public interest through certifying, governing and enforcing the standards of practice for the teaching profession.

The functions of the teacher's colleges may include setting out clear standards of practice, providing for the ongoing education of teachers, investigating complaints involving members, conducting hearings into allegations of professional misconduct and taking appropriate disciplinary action and accrediting teacher education programs. In many situations teachers in publicly funded schools must be members in good standing with the college, and private schools may also require their teachers to be college peoples. In other areas these roles may belong to the State Board of Education, the Superintendent of Public Instruction, the State Education Agency or other governmental bodies. In still other areas Teaching Unions may be responsible for some or all of these duties.

Pedagogy and teaching

In education, teachers facilitate student learning, often in a school or academy or perhaps in another environment such as outdoors. A teacher who teaches on an individual basis may be described as a tutor.

Dutch schoolmaster and children, 1662

A primary school teacher in northern Laos.

The teacher-student-monument in Rostock, Germany, honours teachers.

The objective is typically accomplished through either an informal or formal approach to learning, including a course of study and lesson plan that teaches skills, knowledge and/or thinking skills. Different ways to teach are often referred to as pedagogy. When deciding what teaching method to use teachers consider students' background knowledge, environment, and their learning goals as well as standardized curricula as determined by the relevant authority. Many times, teachers assist in learning outside of the classroom by accompanying students on field trips. The increasing use of technology, specifically the rise of the internet over the past decade, has begun to shape the way teachers approach their roles in the classroom.

GDR "village teacher" (a teacher teaching students of all age groups in one class) in 1951.

The objective is typically a course of study, lesson plan, or a practical skill. A teacher may follow standardized curricula as determined by the relevant authority. The teacher may interact with students of different ages, from

infants to adults, students with different abilities and students with learning disabilities.

Teaching using pedagogy also involve assessing the educational levels of the students on particular skills. Understanding the pedagogy of the students in a classroom involves using differentiated instruction as well as supervision to meet the needs of all students in the classroom. Pedagogy can be thought of in two manners. First, teaching itself can be taught in many different ways, hence, using a pedagogy of teaching styles. Second, the pedagogy of the learners comes into play when a teacher assesses the pedagogic diversity of his/her students and differentiates for the individual students accordingly.

Perhaps the most significant difference between primary school and secondary school teaching is the relationship between teachers and children. In primary schools each class has a teacher who stays with them for most of the week and will teach them the whole curriculum. In secondary schools they will be taught by different subject specialists each session during the week and may have 10 or more different teachers. The relationship between children and their teachers tends to be closer in the primary school where they act as form tutor, specialist teacher and surrogate parent during the course of the day.

This is true throughout most of the United States as well. However, alternative approaches for primary education do exist. One of these, sometimes referred to as a "platoon" system, involves placing a group of students together in one class that moves from one specialist to another for every subject. The advantage here is that students learn from teachers who specialize in one subject and who tend to be more knowledgeable in that one area than a teacher who teaches many subjects. Students still derive a strong sense of security by staying with the same group of peers for all classes.

Co-teaching has also become a new trend amongst educational institutions. Co-teaching is defined as two or more teachers working harmoniously to fulfill the needs of every student in the classroom. Co-teaching focuses the student on learning by providing a social networking support that allows them to reach their full cognitive potential. Co-teachers work in sync with one another to create a climate of learning.

Rights to enforce school discipline

Throughout the history of education the most common form of school discipline was corporal punishment. While a child was in school, a teacher was expected to act as a substitute parent, with all the normal forms of parental discipline open to them.

In past times, corporal punishment (spanking or paddling or caning or strapping or birching the student in order to cause physical pain) was one of the most common forms of school discipline throughout much of the world. Most Western countries, and some others, have now banned it, but it remains lawful in the United States following a US Supreme Court decision in 1977 which held that paddling did not violate the US Constitution.[1]

Medieval schoolboy birched on the bare buttocks.

30 US states have banned corporal punishment, the others (mostly in the South) have not. It is still used to a significant (though declining) degree in some public schools in Alabama, Arkansas, Georgia, Louisiana, Mississippi, Oklahoma, Tennessee and Texas. Private schools in these and most other states may also use it. Corporal punishment in American schools is administered to the seat of the student's trousers or skirt with a specially made wooden paddle. This often used to take place in the classroom or hallway, but nowadays the punishment is usually given privately in the principal's office.

Official corporal punishment, often by caning, remains commonplace in schools in some Asian, African and Caribbean countries. For details of individual countries see School corporal punishment.

Currently detention is one of the most common punishments in schools in the United States, the UK, Ireland, Singapore and other countries. It requires the pupil to remain in school at a given time in the school day (such as lunch, recess or after school); or even to attend school on a non-school day, e.g. "Saturday detention" held at some US schools. During detention, students normally have to sit in a classroom and do work, write lines or a punishment essay, or sit quietly.

A modern example of school discipline in North America and Western Europe relies upon the idea of an assertive teacher who is prepared to impose their will upon a class. Positive reinforcement is balanced with immediate and fair punishment for misbehavior and firm, clear boundaries define what is appropriate and inappropriate behavior. Teachers are expected to respect their students, and sarcasm and attempts to humiliate pupils are seen as falling outside of what constitutes reasonable discipline.

Whilst this is the consensus viewpoint amongst the majority of academics, some teachers and parents advocate a more assertive and confrontational style of discipline. Such individuals claim that many problems with modern schooling stem from the weakness in school discipline and if teachers exercised firm control over the classroom they would be able to teach more efficiently. This viewpoint is supported by the educational attainment of countries—in East Asia for instance—that combine strict discipline with high standards of education.

It's not clear, however that this stereotypical view reflects the reality of East Asian classrooms or that the educational goals in these countries are commensurable with those in Western countries. In Japan, for example, although average attainment on standardized tests may exceed those in Western countries, classroom discipline and behavior is highly problematic. Although, officially, schools have extremely rigid codes of behavior, in practice many teachers find the students unmanageable and do not enforce discipline at all.

Where school class sizes are typically 40 to 50 students, maintaining order in the classroom can divert the teacher from instruction, leaving little opportunity for concentration and focus on what is being taught. In response, teachers may concentrate their attention on motivated students, ignoring attention-seeking and disruptive students. The result of this is that motivated students, facing demanding university entrance examinations, receive disproportionate resources, while the rest of the students are allowed, perhaps expected to, fail. Given the emphasis on attainment of university places, administrators and governors may regard this policy as appropriate.

Obligation to honor students rights

Sudbury model democratic schools claim that popularly based authority can maintain order more effectively than dictatorial authority for governments and schools alike. They also claim that in these schools the preservation of public order is easier and more efficient than anywhere else. Primarily because rules and regulations are made by the community as a whole, thence the school atmosphere is one of persuasion and negotiation, rather than confrontation since there is no one to confront. Sudbury model democratic schools' experience shows that a school that has good, clear laws, fairly and democratically passed by the entire school community, and a good judicial system for enforcing these laws, is a school in which community discipline prevails, and in which an increasingly sophisticated concept of law and order develops, against other schools today, where rules are arbitrary, authority is absolute, punishment is capricious, and due process of law is unknown.[2] [3]

Teacher Enthusiasm

Since teachers can affect how students perceive the course materials, it has been found that teachers who showed enthusiasm towards the course materials and students can affect a positive learning experience towards the course materials. On teacher/course evaluations, it was found that teachers who have a positive disposition towards the course content tend to transfer their passion to receptive students.[4] Teachers cannot teach by rote but have to find new invigoration for the course materials on a daily basis. Teachers have to keep in mind that they are teaching new minds every term or semester.[5] Otherwise, teachers will fall into the trap of having done this material again and

start feeling bored with the subject which in turn bore the students as well. Students who had enthusiastic teachers tend to rate them higher than teachers who didn't show much enthusiasm for the course materials.

Teachers that exhibit enthusiasm can lead to students who are more likely to be engaged, interested, energetic, and curious about learning the subject matter. Recent research has found a correlation between teacher enthusiasm and students' intrinsic motivation to learn and vitality in the classroom.[6] Controlled, experimental studies exploring intrinsic motivation of college students has shown that nonverbal expressions of enthusiasm, such as demonstrative gesturing, dramatic movements which are varied, and emotional facial expressions, result in college students reporting higher levels of intrinsic motivation to learn. Students who experienced a very enthusiastic teacher were more likely to read lecture material outside of the classroom.

There are various mechanisms by which teacher enthusiasm may facilitate higher levels of intrinsic motivation. Teacher enthusiasm may contribute to a classroom atmosphere full of energy and enthusiasm which feed student interest and excitement in learning the subject matter. Enthusiastic teachers may also lead to students becoming more self-determined in their own learning process. The concept of mere exposure indicates that the teacher's enthusiasm may contribute to the student's expectations about intrinsic motivation in the context of learning. Also, enthusiasm may act as a "motivational embellishment"; increasing a student's interest by the variety, novelty, and surprise of the enthusiastic teacher's presentation of the material. Finally, the concept of emotional contagion, may also apply. Students may become more intrinsically motivated by catching onto the enthusiasm and energy of the teacher.

Research shows that student motivation and attitudes towards school are closely linked to student-teacher relationships. Enthusiastic teachers are particularly good at creating beneficial relations with their students. Their ability to create effective learning environments that foster student achievement depends on the kind of relationship they build with their students.[7] [8] [9] [10] Useful teacher-to-student interactions are crucial in linking academic success with personal achievement.[11] Here, personal success is a student's internal goal of improving himself, whereas academic success includes the goals he receives from his superior. A teacher must guide his student in aligning his personal goals with his academic goals. Students who receive this positive influence show stronger self-confidence and greater personal and academic success than those without these teacher interactions.[10] [12] [13]

Students are likely to build stronger relations with teachers who are friendly and supportive and will show more interest in courses taught by these teachers.[11] [12] Teachers that spend more time interacting and working directly with students are perceived as supportive and effective teachers. Effective teachers have been shown to invite student participation and decision making, allow humor into their classroom, and demonstrate a willingness to play.[8]

The way a teacher promotes the course they are teaching, the more the student will get out of the subject matter. The three most important aspects of teacher enthusiasm are enthusiam about teaching, enthusiasm about the students, and enthusiasm about the subject matter. A teacher must enjoy teaching. If they do not enjoy what they are doing, the students will be able to tell. They also must enjoy being around their students. A teacher who cares for their students is going to help that individual succeed in their life in the future. The teacher also needs to be enthusiatic about the subject matter they are teaching. For example, a teacher talking about chemsitry needs to enjoy the art of chemistry and show that to their students. A spark in the teacher may create a spark of excitement in the student as well. A enthusiatic teacher has the ability to be very influential in the young students life.

Misconduct

Misconduct by teachers, especially sexual misconduct, has been getting increased scrutiny from the media and the courts.[14] A study by the American Association of University Women reported that 0.6% of students in the United States claim to have received unwanted sexual attention from an adult associated with education; be they a volunteer, bus driver, teacher, administrator or other adult; sometime during their educational career.[15]

A study in England showed a 0.3% prevalence of sexual abuse by any professional, a group that included priests, religious leaders, and case workers as well as teachers.[16] It is important to note, however, that the British study referenced above is the only one of its kind and consisted of "a random ... probability sample of 2,869 young people between the ages of 18 and 24 in a computer-assisted study" and that the questions referred to "sexual abuse with a professional," not necessarily a teacher. It is therefore logical to conclude that information on the percentage of abuses by teachers in the United Kingdom is not explicitly available and therefore not necessarily reliable. The AAUW study, however, posed questions about fourteen types of sexual harassment and various degrees of frequency and included only abuses by teachers. "The sample was drawn from a list of 80,000 schools to create a stratified two-stage sample design of 2,065 8th to 11th grade students"Its reliability was gauged at 95% with a 4% margin of error.

In the United States especially, several high-profile cases such as Debra LaFave, Pamela Rogers, and Mary Kay Latourneau have caused increased scrutiny on teacher misconduct.

Chris Keates, the general secretary of National Association of Schoolmasters Union of Women Teachers, said that teachers who have sex with pupils over the age of consent should not be placed on the sex offenders register and that prosecution for statutory rape "is a real anomaly in the law that we are concerned about." This has led to outrage from child protection and parental rights groups.[17]

Teaching around the world

There are many similarities and differences among teachers around the world. In almost all countries teachers are educated in a university or college. Governments may require certification by a recognized body before they can teach in a school. In many countries, elementary school education certificate is earned after completion of high school. The high school student follows an education specialty track, obtain the prerequisite "student-teaching" time, and receive a special diploma to begin teaching after graduation.

International schools generally follow an English-speaking, Western curriculum and are aimed at expatriate communities.[18]

Canada

Teaching in Canada requires a post-secondary degree Bachelor Degree. In most provinces a second Bachelor Degree is required to become a qualified teacher. Salary ranges from $40,000/year to $90,000/yr. Teachers have the option to teach for a public school which is funded by the provincial government or teaching in a private school which is funded by the private sector, businesses and sponsors.

England and Wales

Salaries for Nursery, Primary and Secondary School teachers ranged from £20,133 to £41,004 in September 2007, although some salaries can go much higher depending on experience and extra responsibilities.[19] Preschool teachers may earn £20,980 annually. Teachers in state schools must have at least a bachelor's degree, complete an approved teacher education program, and be licensed.

Many counties offer alternative licensing programs to attract people into teaching, especially for hard-to-fill positions. Excellent job opportunities are expected as retirements, especially among secondary school teachers, outweigh slowing enrollment growth; opportunities will vary by geographic area and subject taught.

France

In France, teachers, or *professors*, are mainly civil servants, recruited by competitive examination.

Republic of Ireland

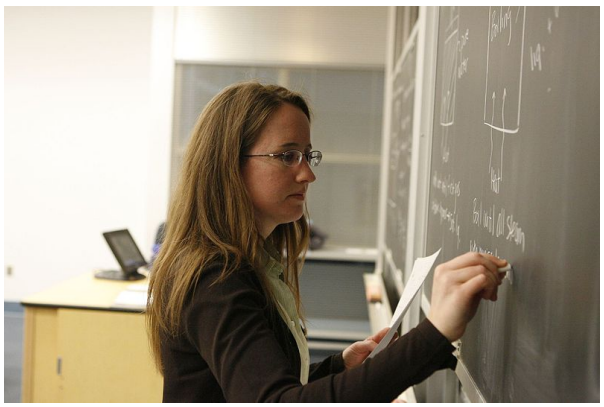
Salaries for primary teachers in the Republic of Ireland depend mainly on seniority (i.e. holding the position of principal, deputy principal or assistant principal), experience and qualifications. Extra pay is also given for teaching through the Irish language, in a Gaeltacht area or on an island. The basic pay for a starting teacher is €30,904 p.a., rising incrementally to €59,359 for a teacher with 25 years' service. A principal of a large school with many years' experience and several qualifications (M.A., H.Dip., etc.) could earn over €90,000.[20]

Scotland

In Scotland, anyone wishing to teach must be registered with the General Teaching Council for Scotland (GTCS). Teaching in Scotland is an all graduate profession and the normal route for graduates wishing to teach is to complete a programme of Initial Teacher Education (ITE) at one of the seven Scottish Universities who offer these courses. Once successfully completed, "Provisional Registration" is given by the GTCS which is raised to "Full Registration" status after a year if there is sufficient evidence to show that the "Standard for Full Registration" has been met.[21]

For the salary year beginning April 2008, unpromoted teachers in Scotland earned from £20,427 for a Probationer, up to £32,583 after 6 years teaching, but could then go on to earn up to £39,942 as they complete the modules to earn Chartered Teacher Status (requiring at least 6 years at up to two modules per year.) Promotion to Principal Teacher positions attracts a salary of between £34,566 and £44,616; Deputy Head, and Head teachers earn from £40,290 to £78,642.[22]

United States



An American teacher writing on a blackboard.

In the United States, each state determines the requirements for getting a license to teach in public schools. Teaching certification generally lasts three years, but teachers can receive certificates that last as long as ten years.[23] Public school teachers are required to have a bachelor's degree and the majority must be certified by the state in which they teach. Many charter schools do not require that their teachers be certified, provided they meet the standards to be highly qualified as set by No Child Left Behind. Additionally, the requirements for substitute/temporary teachers are generally not as rigorous as those for full-time professionals. The Bureau of Labor Statistics estimates that there are 1.4 million elementary school teachers,[24] 674,000 middle school teachers,[25] and 1 million secondary school teachers employed in the U.S.[26]

In the past, teachers have been paid relatively low salaries. However, average teacher salaries have improved rapidly in recent years. US teachers are generally paid on graduated scales, with income depending on experience. Teachers with more experience and higher education earn more than those with a standard bachelor's degree and certificate. Salaries vary greatly depending on state, relative cost of living, and grade taught. Salaries also vary within states where wealthy suburban school districts generally have higher salary schedules than other districts. The median salary for all primary and secondary teachers was $46,000 in 2004, with the average entry salary for a teacher with a bachelor's degree being an estimated $32,000. Median salaries for preschool teachers, however, were less than half

the national median for secondary teachers, clock in at an estimated $21,000 in 2004.[27] For high school teachers, median salaries in 2007 ranged from $35,000 in South Dakota to $71,000 in New York, with a national median of $52,000.[28] Some contracts may include long-term disability insurance, life insurance, emergency/personal leave and investment options.[29] The American Federation of Teachers' teacher salary survey for the 2006-07 school year found that the average teacher salary was $51,009.[30] In a salary survey report for K-12 teachers, elementary school teachers had the lowest median salary earning $39,259. High school teachers had the highest median salary earning $41,855.[31] Many teachers take advantage of the opportunity to increase their income by supervising after-school programs and other extracurricular activities. In addition to monetary compensation, public school teachers may also enjoy greater benefits (like health insurance) compared to other occupations. Merit pay systems are on the rise for teachers, paying teachers extra money based on excellent classroom evaluations, high test scores and for high success at their overall school. Also, with the advent of the internet, many teachers are now selling their lesson plans to other teachers through the web in order to earn supplemental income, most notably on TeachersPayTeachers.com.[32]

Spiritual teacher

In Hinduism the spiritual teacher is known as a guru. In the Latter Day Saint movement the teacher is an office in the Aaronic priesthood, while in Tibetan Buddhism the teachers of Dharma in Tibet are most commonly called a Lama. A Lama who has through phowa and siddhi consciously determined to be reborn, often many times, in order to continue their Bodhisattva vow is called a Tulku.

There are many concepts of teachers in Islam, ranging from mullahs (the teachers at madrassas) to ulemas.

A Rabbi is generally regarded as the Jewish spiritual teacher.

Popular Educators

- Howard Adelman
- Leib Glantz
- Charles Wedemeyer
- Edith Abbott
- Raymond Macdonald Alden
- Henry James Anderson
- Charles William Bardeen
- Charles Rollin
- Juan Pablo Bonet
- Lancelot Bavin
- Zarfishan Qaiser

See also

- Certified teacher
- Paraprofessional educator
- College of Education
- Student teacher
- Teacher's union
- Substitute teacher
- Teacher Support Network (in the UK)

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> Knowing all this, we would expect; nay, insist (one would think) that the schools, in training their students to contribute productively to the political stability and growth of America, would be democratic and non-autocratic; be governed by clear rules and due process; be guardians of individual rights of students. A student growing up in schools having these features would be ready to move right into society at large. I think it is safe to say that the individual liberties so cherished by our ancestors and by each succeeding generation will never be really secure until our youth, throughout the crucial formative years of their minds and spirits, are nurtured in a school environment that embodies these basic American truths.

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Professional development

Professional development refers to skills and knowledge attained for both personal development and career advancement. Professional development encompasses all types of facilitated learning opportunities, ranging from college degrees to formal coursework, conferences and informal learning opportunities situated in practice. It has been described as intensive and collaborative, ideally incorporating an evaluative stage [1] There are a variety of approaches to professional development, including consultation, coaching, communities of practice, lesson study, mentoring, reflective supervision and technical assistance.[2]

Who participates and why

A wide variety of people, such as teachers, military officers and non-commissioned officers, health care professionals, lawyers, accountants and engineers engage in professional development. Individuals may participate in professional development because of an interest in lifelong learning, a sense of moral obligation, to maintain and improve professional competence, enhance career progression, keep abreast of new technology and practice, or to comply with professional regulatory organizations. [3] [4] [5] Many American states have professional development requirements for school teachers. For example, Arkansas teachers must complete 60 hours of documented professional development activities annually. [6] Professional development credits are named differently from state to state. For example, teachers: in Indiana are required to earn 90 Continuing Renewal Units (CRUs) per year [7] ; in Massachusetts, need 150 Professional Development Points (PDPs) [8] ; and in Georgia, must earn 10 Professional Learning Units (PLUs) [9] . American and Canadian nurses, as well as those in the United Kingdom, are required to participate in formal and informal professional development (earning Continuing education units, or CEUs) in order to maintain professional registration. [10] [11] [12] Other groups such as engineering and geoscience regulatory bodies also have mandatory professional development requirements.[5]

Approaches to professional development

In a broad sense, professional development may include *formal* types of vocational education, typically post-secondary or poly-technical training leading to qualification or credential required to obtain or retain employment. Professional development may also come in the form of pre-service or in-service professional development programs. These programs may be formal, or informal, group or individualized. Individuals may pursue professional development independently, or programs may be offered by human resource departments. Professional development on the job may develop or enhance process skills, sometimes referred to as leadership skills, as well as task skills. Some examples for process skills are 'effectiveness skills', 'team functioning skills', and 'systems thinking skills'.

Professional development opportunities can range from a single workshop to a semester-long academic course, to services offered by a medley of different professional development providers and varying widely with respect to the

philosophy, content, and format of the learning experiences. Some examples of approaches to professional development include:[13]

- **Case Study Method** - The case method is a teaching approach that consists in presenting the students with a case, putting them in the role of a decision maker facing a problem (Hammond 1976) - *see also* Case method.
- **Consultation** - to assist an individual or group of individuals to clarify and address immediate concerns by following a systematic problem-solving process.
- **Coaching** - to enhance a person's competencies in a specific skill area by providing a process of observation, reflection, and action.
- **Communities of Practice** - to improve professional practice by engaging in shared inquiry and learning with people who have a common goal
- **Lesson Study** - to solve practical dilemmas related to intervention or instruction through participation with other professionals in systematically examining practice
- **Mentoring** - to promote an individual's awareness and refinement of his or her own professional development by providing and recommending structured opportunities for reflection and observation
- **Reflective Supervision** - to support, develop, and ultimately evaluate the performance of employees through a process of inquiry that encourages their understanding and articulation of the rationale for their own practices
- **Technical Assistance** - to assist individuals and their organization to improve by offering resources and information, supporting networking and change efforts

Professional development is a broad term, encompassing a range of people, interests and approaches. Those who engage in professional development share a common purpose of enhancing their ability to do their work. At the heart of professional development is the individual's interest in lifelong learning and increasing their own skills and knowledge. The 21st century has seen a significant growth in online professional development. [14] Content providers incorporate collaborative platforms such as discussion boards and wikis, thereby encouraging and facilitating interaction, and optimizing training effectiveness. [15] [16] [17] [18]

See also

- Apprenticeship
- Career
- Continuing Professional Development
- Core competency
  - Competency evaluation
- Initial Professional Development
- Induction training
- Licensure
- Mentor
- Organizational Dissent
- PD 360 (online library of educational professional development video programs)
- Profession
- Reflective practice
- Training and development
- Vocational education

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Teacher education

Teacher education refers to the policies and procedures designed to equip prospective teachers with the knowledge, attitudes, behaviors and skills they require to perform their tasks effectively in the classroom, school and wider community.

Although ideally it should be conceived of, and organised as, a seamless continuum, teacher education is often divided into these stages:

- *initial teacher training / education* (a pre-service course before entering the classroom as a fully responsible teacher);
- *induction* (the process of providing training and support during the first few years of teaching or the first year in a particular school);
- *teacher development* or *continuing professional development (CPD)* (an in-service process for practicing teachers).

There is a longstanding and ongoing debate about the most appropriate term to describe these activities. The term 'teacher training' (which may give the impression that the activity involves training staff to undertake relatively routine tasks) seems to be losing ground to 'teacher education' (with its connotation of preparing staff for a professional role as a reflective practitioner)[1] .

Initial teacher education

Organization

Initial Teacher Education in many countries takes place largely or exclusively in institutions of Higher Education. It may be organized according to two basic models.

In the 'consecutive' model, a teacher first obtains a qualification in one or more subjects (often a first university degree), and then studies for a further period to gain an additional qualification in teaching; (in some systems this takes the form of a post-graduate degree, increasingly, this is a Masters).

In the alternative 'concurrent' model, a student simultaneously studies both one or more academic subjects, and the ways of teaching that subject, leading to a qualification as a teacher of that subject.

Other pathways are also available. In some countries, it is possible for a person to receive training as a teacher by working in a school under the responsibility of an accredited experienced practitioner.

In the United States, approximately one-third of new teachers come through alternative routes to teacher certification, according to testimony given by Emily Feistritzer, the President of National Center for Alternative Certification and the National Center for Education Information, to a congressional subcommittee on May 17, 2007. However, many alternative pathways are affiliated with schools of education, where candidates still enroll in university-based coursework. A supplemental component of university-based coursework is community-based teacher education, where teacher candidates immerse themselves in communities that will allow them to apply teaching theory to practice. Community-based teacher education also challenges teacher candidates' assumptions about the issues of gender, race, and multicultural diversity. [2]

Curriculum

The question of what knowledge, attitudes, behaviours and skills teachers should possess is the subject of much debate in many cultures. This is understandable, as teachers are entrusted with the transmission to learners of society's beliefs, attitudes and deontology, as well as of information, advice and wisdom, and with facilitating learners' acquisition of the key knowledge, attitudes and behaviours that they will need to be active in society and the economy.

Generally, Teacher Education curricula can be broken down into these blocks:

- foundational knowledge and skills--usually this area is about education-related aspects of philosophy of education, history of education, educational psychology, and sociology of education
- content-area and methods knowledge--often also including ways of teaching and assessing a specific subject, in which case this area may overlap with the first ("foundational") area. There is increasing debate about this aspect; because it is no longer possible to know in advance what kinds of knowledge and skill pupils will need when they enter adult life, it becomes harder to know what kinds of knowledge and skill teachers should have. Increasingly, emphasis is placed upon 'transversal' or 'horizontal' skills (such as 'learning to learn' or 'social competences', which cut across traditional subject boundaries, and therefore call into question traditional ways of designing the Teacher Education curriculum (and traditional school curricula and ways of working in the classroom).
- practice at classroom teaching or at some other form of educational practice--usually supervised and supported in some way, though not always. Practice can take the form of field observations, student teaching, or (US) internship (See Supervised Field Experiences below.)

Supervised field experiences

- field observations--include observation and limited participation within a classroom under the supervision of the classroom teacher
- student teaching--includes a number of weeks teaching in an assigned classroom under the supervision of the classroom teacher and a supervisor (e.g. from the university)
- internship--teaching candidate is supervised within his or her own classroom

These three areas reflect the organization of most teacher education programs in North America (though not necessarily elsewhere in the world)--courses, modules, and other activities are often organized to belong to one of the three major areas of teacher education. The organization makes the programs more rational or logical in structure. The conventional organization has sometimes also been criticized, however, as artificial and unrepresentative of how teachers actually experience their work. Problems of practice frequently (perhaps usually) concern foundational issues, curriculum, and practical knowledge simultaneously, and separating them during teacher education may therefore not be helpful.

Induction of beginning teachers

Teaching involves a the use of a wide body of knowledge about the subject being taught, and another set of knowledge about the most effective ways to teach that subject to different kinds of learner; it therefore requires teachers to undertake a complex set of tasks every minute. Many teachers experience their first years in the profession as stressful. The proportion of teachers who either do not enter the profession after completing initial training, or who leave the profession after their first teaching post, is high[3] .

A distinction is sometimes made between inducting a teacher into a new school (explaining the school's vision, procedures etc), and inducting a new teacher into the teaching profession (providing the support necessary to help the beginning teacher develop a professional identity, and to further develop the basic competences that were acquired in college.)

A number of countries and states have put in place comprehensive systems of support to help beginning teachers during their first years in the profession. Elements of such a programme can include:

- mentoring: the allocation to each beginning teacher of an experienced teacher, specifically trained as a mentor; the mentor may provide emotional and professional support and guidance; in many US states, induction is limited to the provision of a mentor, but research suggests that, in itself, it is not enough. [4] .
- a peer network: for mutual support but also for peer learning.
- input from educational experts (e.g. to help the beginning teacher relate what she learned in college with classroom reality)
- support for the process of self-reflection that all techers engage in (e.g. through the keeping of a journal).

Some research[5] suggests that such programmes can: increase the retention of beginning teachers in the profession; improve teaching performance; promote the teachers' personal and professional well-being[6] .

Continuous professional development

Because the world that teachers are preparing young people to enter is changing so rapidly, and because the teaching skills required are evolving likewise, no initial course of teacher education can be sufficient to prepare a teacher for a career of 30 or 40 years. Continuous Professional Development (CPD) is the process by which teachers (like other professionals) reflect upon their competences, maintain them up to date, and develop them further.

The extent to which education authorities support this process varies, as does the effectiveness of the different approaches. A growing research base suggests that to be most effective, CPD activities should:

- be spread over time
- be collaborative
- use active learning
- be delivered to groups of teachers
- include periods of practice, coaching, and follow-up
- promote reflective practice
- encourage experimentation, and
- respond to teachers' needs.[7] [8] [9]

Quality assurance

The quality of the work undertaken by a teacher has significant effects upon his or her pupils or students. Further, those who pay teachers' salaries, whether through taxes or through school fees, wish to be assured that they are receiving value for money. Ways to measure the quality of work of individual teachers, of schools, or of education systems as a whole, are therefore often sought.

In most countries, teacher salary is not related to the perceived quality of his or her work. Some, however, have systems to identify the 'best-performing' teachers, and increase their remuneration accordingly. Elsewhere, assessments of teacher performance may be undertaken with a view to identifying teachers' needs for additional training or development, or, in extreme cases, to identify those teachers that should be required to leave the profession. In some countries, teachers are required to re-apply periodically for their license to teach, and in so doing, to prove that they still have the requisite skills.

Feedback on the performance of teachers is integral to many state and private education procedures, but takes many different forms. The 'no fault' approach is believed by some to be satisfactory, as weaknesses are carefully identified, assessed and then addressed through the provision of in

Teacher education policy

The process by which teachers are educated is the subject of political discussion in many countries, reflecting both the value attached by societies and cultures to the preparation of young people for life, and the fact that education systems consume significant financial resources (of which teacher salaries is often the largest single element).

However, the degree of political control over Teacher Education varies. Where TE is entirely in the hands of universities, the state may have no direct control whatever over what or how new teachers are taught; this can lead to anomalies, such as teachers being taught using teaching methods that would be deemed inappropriate if they used the same methods in schools, or teachers being taught by persons with little or no hands-on experience of teaching in real classrooms.

In other systems, TE may be the subject of detailed prescription (e.g. the state may specify the skills that all teachers must possess, or it may specify the content of TE courses).

In many states, the process of acquiring the relevant knowledge and skills to be a teacher (qualification) is separate from the process of acquiring the official permission to teach in public schools (registration or licensing).

Policy cooperation in the European Union has led to a broad description of the kinds of attributes that teachers in EU Member States should possess: the [Common European Principle for Teacher Competences and Qualifications][10].

See also

- School of Education
- Pedagogy
- Normal school
- Educational psychology --a Wikibook with some material useable in teaching introductory educational psychology

External links

- Resource for Teacher Certification [11]
- American Association of Colleges for Teacher Education [12]
- Master of Arts in Teaching [13]
- Research on Teacher Education in the Developing World [14]
- Teacher leadership in developing countries [15]
- teachingedpsych.wikispaces.com [16] --a repository of materials helpful in teaching educational psychology within preservice teacher education programs
- Educational psychology [17] --online, open-source text for use in preservice teacher education programs
- Educational psychology [18] --a textbook about introductory educational psychology written by undergraduate students
- Social foundations of education --a student-written textbook about social foundations of education
- Resource of Teacher Certification Information [19]
- Teaching Educational Psychology [20] --online journal about educational psychology in teacher education programs
- Canadian Journal of Educational Administration and Policy [21] --online journal that frequently publishes about teacher education issues
- MOFET ITEC - International Portal of Teacher Education [22]
- Teacher Training Resource Bank [23]
- EU policy on Teacher Education [24]
- trb results [25]
- Teachers' Toolbox [26]
- Lesson Observation Videos [27]
- http://youareconnected.info/serv03.htm - for a listing of teacher education programs available
- http://youareconnected.info/serv04.htm - for a listing of Systematic Training for Effective Teaching programs available

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Initial teacher education

Initial Teacher Education (ITE) is a name used for teacher training in Scotland

Qualified Teacher Learning and Skills

In September 2007 the UK Government introduced reforms to the training and qualifications of all teachers, tutors, trainers, lecturers and instructors working in the post-compulsory education and training sector (sometimes referred to as the lifelong learning sector).

A key element of these reforms is the introduction of a new status of **Qualified Teacher Learning and Skills** (**QTLS**).

Gaining QTLS

A candidate must have completed and passed a teacher training course approved by Lifelong Learning UK. The candidate must then register with the Institute for Learning which maintains a list of all accredited professionals in the sector. This leads to the awarding of a 'License to Practice'. Maintenance of this license requires the individual to undertake and record annual Continuing Professional Development (CPD)

See also

- Qualified Teacher Status (QTS)

External links

- Lifelong Learning UK [1]
- Institute for Learning [2]

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Qualified Teacher Status

Qualified Teacher Status (**QTS**) is required in England and Wales to become, and continue being, a teacher of children in the state and special education sectors. Similar statuses exist in the rest of the United Kingdom (Scotland and Northern Ireland), but under different names.

Gaining QTS

An undergraduate degree and some form of teacher training is compulsory for new QTS recipients. The most common way to achieve QTS is for those who already have a degree to undertake a postgraduate teacher training course, such as the Postgraduate Certificate in Education (PGCE), Professional Certificate in Education or employment-based training, such as the Graduate Teacher Programme (GTP). There are also some undergraduate degree qualifications, such as the Bachelor of Education, that lead to the award of a first degree and QTS. In England only, candidates must also pass the QTS Skills Tests. All candidates must have GCSEs at grade C or above (or demonstrate an equivalent standard) in English, Mathematics and, for primary trainees only, Science before embarking on teacher training.

All training which leads to Qualified Teacher Status requires trainees to train across at least two key consecutive pupil age ranges as defined in the Secretary of State's Requirements for Initial Teacher Training.[1] The age ranges are the following:

- Ages 3–5 (Foundation stage)
- Ages 5–7 (School years 1-2)
- Ages 7–9 (School years 3-4)
- Ages 9–11 (School years 5-6)
- Ages 11–14 (School years 7-9)
- Ages 14–16 (School years 10-11)
- Ages 16–19 (School years 12-13)

The General Teaching Council for England and General Teaching Council for Wales maintain all registrations, as well as issuing QTS certificates (a task previously undertaken by the Department for Education and Skills).

QTS is technically recognised only in the country it was awarded (England or Wales), but teachers can normally apply for QTS in the other country relatively easily. QTS is also recognised by many other countries once the relevant paperwork has been completed. Teachers trained outside England and Wales must also apply to be awarded QTS if they wish to teach in England and Wales.

After having been awarded QTS teachers must normally still pass an induction period (previously called 'probation') – normally their first year of teaching. Those who fail the induction still retain their QTS, but cannot teach in state-run schools. The induction period normally lasts a year (three school terms). Such teachers are often known as a Newly Qualified Teacher or NQT.

Not all European Union qualifications have been officially recognised yet, so one should confirm with one's education establishment as to whether one's qualifications are acceptable, or one needs to go through the recognition process.

One's land or origin may well have an office whose purpose is translation and confirmatiom/recognition of qualifications. Again, one should, if uncertain, seek advice by ringing the General Teaching Council to see if such confirmation is required.

Scotland and Northern Ireland

QTS as such does not exist in Scotland or Northern Ireland. However, similarly in England and Wales, all teachers in Scotland and Northern Ireland are required to register with either the General Teaching Council for Scotland or the General Teaching Council for Northern Ireland; the General Teaching Councils will consider only graduates with a teaching qualifications (such as the PGCE or PGDE) for registration.

In Scotland, a one-year probation period (equivalent to induction in England and Wales) must be completed.

Those holding English or Welsh QTS (or an equivalent from another country) must apply for registration with the relevant General Teaching Council. Each case is considered individually; even those with English or Welsh QTS are not guaranteed to be allowed to teach in Scotland or Northern Ireland.

See also

- Qualified Teacher Learning and Skills (QTLS)
- Early Years Professional Status

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External links

- Standards for the Award of Qualified Teacher Status (http://www.tda.gov.uk/Recruit/thetrainingprocess/qualifiedteacherstatus/achievingqts.aspx)
- General Teaching Council for England (http://www.gtce.org.uk/)
- General Teaching Council for Wales (http://www.gtcw.org.uk/)
- General Teaching Council for Scotland (http://www.gtcs.org.uk/)
- General Teaching Council for Northern Ireland (http://www.gtcni.org.uk/)

Teacher induction

Induction (educator)

Induction is the support and guidance provided to novice teachers and school administrators in the early stages of their careers. Induction encompasses orientation to the workplace, socialization, mentoring, and guidance through beginning teacher practice.

Comprehensive, high-quality induction consists of several key elements:

- a multi-year program
- rigorous mentor selection and training
- subject-area pairing of mentors and beginning educators
- sufficient time for mentors to meet with and observe new educators
- formative assessment that assists beginning educators to advance along a continuum of professional growth.

The New Teacher Center induction model is nationally recognized in the United States for its promotion of new educator development and its impact on teacher retention and student learning.

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Classroom

A **classroom** is a room in which teaching or learning activities can take place. Classrooms are found in educational institutions of all kinds, including public and private schools, corporations, and religious and humanitarian organizations. The classroom attempts to provide a safe space where learning can take place uninterrupted by other distractions.

Classrooms in 1897 at the Francis M. Drexel School. Note the gaslights, chalkboards, moveable walls, and the maps and pictures on the walls

Typical equipment

Most classrooms have a large writing surface where the instructor or students can share notes with other members of the class. Traditionally, this was in the form of a blackboard but these are becoming less common in well-equipped schools, and are replaced by flipcharts, whiteboards and interactive whiteboards. Many classrooms also have TVs, maps, charts, books, monographs and LCD projectors for presenting information and images from a computer.

A university classroom with permanently-installed desk-chairs, green chalkboards, and an overhead projector.

Decor and design

The layout, design and decor of the classroom has a significant effect upon the quality of education. Attention to the acoustics and colour scheme may reduce distractions and aid concentration. The lighting and furniture likewise influence study and learning.

Types of classrooms

For lessons that require specific resources or a vocational approach different types of classrooms both indoors and outdoors are used. This is known as situated learning. Classrooms can range from small groups of five or six to big classrooms with hundreds of students. A large class room is also called a lecture hall. A few examples of classrooms are computer labs which are used for IT lessons in schools, gymnasiums for sports, and science laboratories for biology, chemistry and physics.

Classroom in St. Eunan's College, Letterkenny, Ireland

Challenges to the classroom

While the classroom is clearly the dominant setting for learning, the flexibility of classroom instruction is often called into question. Instead of isolating learners in a classroom, many teachers are experimenting with integrating learning into a student's daily life. New learning technologies and mobile devices make it possible for learning to take place at any time, at any place, and (perhaps most importantly) at any pace that the learner desires.

According to the American Society for Training and Development, more than 40% of corporate training now takes place online and not in a classroom.

Open air classroom for Maasai children in Tanzania.

See also

- Classroom of the future
- School of the Future (disambiguation page)
- Schoolroom

Learning

Learning is acquiring new knowledge, behaviors, skills, values, or preferences and may involve synthesizing different types of information. The ability to learn is possessed by humans, animals and some machines. Progress over time tends to follow learning curves.

Human learning may occur as part of education, personal development, or training. It may be goal-oriented and may be aided by motivation. The study of how learning occurs is part of neuropsychology, educational psychology, learning theory, and pedagogy.

Learning may occur as a result of habituation or classical conditioning, seen in many animal species, or as a result of more complex activities such as play, seen only in relatively intelligent animals.[1] [2] Learning may occur consciously or without conscious awareness. There is evidence for human behavioral learning prenatally, in which habituation has been observed as early as 32 weeks into gestation, indicating that the central nervous system is sufficiently developed and primed for learning and memory to occur very early on in development.[3]

Play has been approached by several theorists as the first form of learning. Children play, experiment with the world, learn the rules, and learn to interact. Vygotsky agrees that play is pivotal for children's development, since they make meaning of their environment through play.

While this article describes the different environments in which learning happens, there seems as yet to be no description of how a collection of neurons learns nor where, exactly, in this collection of neurons "memory" is located.

Types of learning

Simple non-associative learning

Habituation

Training meeting about sustainable design. The photo shows a training meeting with factory workers in a stainless steel ecodesign company from Rio de Janeiro, Brazil. A type of learning very used in corporations around the world.

In psychology, habituation is an example of non-associative learning in which there is a progressive diminution of behavioral response probability with repetition stimulus. An animal first responds to a stimulus, but if it is neither rewarding nor harmful the animal reduces subsequent responses. One example of this can be seen in small song birds—if a stuffed owl (or similar predator) is put into the cage, the birds initially react to it as though it were a real predator. Soon the birds react less, showing habituation. If another stuffed owl is introduced (or the same one removed and re-introduced), the birds react to it again as though it were a predator, demonstrating that it is only a very specific stimulus that is habituated to (namely, one particular unmoving owl in one place). Habituation has been shown in essentially every species of animal, including the large protozoan *Stentor coeruleus*.[4]

Sensitization

Sensitization is an example of non-associative learning in which the progressive amplification of a response follows repeated administrations of a stimulus (Bell et al., 1995). An everyday example of this mechanism is the repeated tonic stimulation of peripheral nerves that will occur if a person rubs his arm continuously. After a while, this stimulation will create a warm sensation that will eventually turn painful. The pain is the result of the progressively amplified synaptic response of the peripheral nerves warning the person that the stimulation is harmful. Sensitization is thought to underlie both adaptive as well as maladaptive learning processes in the organism.

Associative learning

Associative learning is the process by which an element is taught through association with a separate, pre-occurring element. It is also referred to as classical conditioning.

Operant conditioning is the use of consequences to modify the occurrence and form of behavior. *Operant conditioning* is distinguished from *Pavlovian conditioning* in that operant conditioning uses reinforcement/punishment to alter an action-outcome association. In contrast Pavlovian conditioning involves strengthening of the stimulus-outcome association.

Behaviorism is a psychological movement that seeks to alter behavior by arranging the environment to elicit successful changes and to arrange consequences to maintain or diminish a behavior. Behaviorists study behaviors that can be measured and changed by the environment. However, they do not eliminate that there are thought processes that interact with those behaviors (see Relational Frame Theory for more information).

Delayed discounting is the process of devaluing rewards based on the delay of time they are presented. This process is thought to be tied to impulsivity. Impulsivity is a core process for many behaviors (e.g., substance abuse, problematic gambling, OCD). Making decisions is an important part of everyday functioning. How we make those decisions is based on what we perceive to be the most valuable or worthwhile actions. This is determined by what we find to be the most reinforcing stimuli. So when teaching an individual a response, you need to find the most potent reinforcer for that person. This may be a larger reinforcer at a later time or a smaller immediate reinforcer.

Classical conditioning

The typical paradigm for classical conditioning involves repeatedly pairing an unconditioned stimulus (which unfailingly evokes a reflexive response) with another previously neutral stimulus (which does not normally evoke the response). Following conditioning, the response occurs both to the unconditioned stimulus and to the other, unrelated stimulus (now referred to as the "conditioned stimulus"). The response to the conditioned stimulus is termed a *conditioned response*. The classic example is Pavlov and his dogs. Meat powder naturally will make a dog salivate when it is put into a dog's mouth; salivating is a reflexive response to the meat powder. Meat powder is the unconditioned stimulus (US) and the salivation is the unconditioned response (UR). Then Pavlov rang a bell before presenting the meat powder. The first time Pavlov rang the bell, the neutral stimulus, the dogs did not salivate, but once he put the meat powder in their mouths they began to salivate. After numerous pairings of the bell, and then food the dogs learned that the bell was a signal that the food was about to come and began to salivate just when the bell was rang. Once this occurs the bell becomes the conditioned stimulus (CS) and the salivation to the bell is the conditioned response (CR).

Another influential person in the world of Classical Conditioning is John B. Watson. Watson's work was very influential and paved the way for B. F. Skinner's radical behaviorism. Watson's behaviorism (and philosophy of science) stood in direct contrast to Freud. Watson's view was that Freud's introspective method was too subjective, and that we should limit the study of human development to directly observable behaviors. In 1913, Watson published the article "Psychology as the Behaviorist Views," in which he argued that laboratory studies should serve psychology best as a science. Watson's most famous, and controversial, experiment, "Little Albert," where he demonstrated how psychologists can account for the learning of emotion through classical conditioning principles.

Imprinting

Imprinting is the term used in psychology and ethology to describe any kind of phase-sensitive learning (learning occurring at a particular age or a particular life stage) that is rapid and apparently independent of the consequences of behavior. It was first used to describe situations in which an animal or person learns the characteristics of some stimulus, which is therefore said to be "imprinted" onto the subject.

Observational learning

The learning process most characteristic of humans is imitation; one's personal repetition of an observed behavior, such as a dance. Humans can copy three types of information simultaneously: the demonstrator's goals, actions and environmental outcomes (results, see Emulation (observational learning)). Through copying these types of information, (most) infants will tune into their surrounding culture.

Play

Play generally describes behavior which has no particular end in itself, but improves performance in similar situations in the future. This is seen in a wide variety of vertebrates besides humans, but is mostly limited to mammals and birds. Cats are known to play with a ball of string when young, which gives them experience with catching prey. Besides inanimate objects, animals may play with other members of their own species or other animals, such as orcas playing with seals they have caught. Play involves a significant cost to animals, such as increased vulnerability to predators and the risk of injury and possibly infection. It also consumes energy, so there must be significant benefits associated with play for it to have evolved. Play is generally seen in younger animals, suggesting a link with learning. However, it may also have other benefits not associated directly with learning, for example improving physical fitness.

Enculturation

Enculturation is the process by which a person learns the requirements of their native culture by which he or she is surrounded, and acquires values and behaviors that are appropriate or necessary in that culture.[5] The influences which as part of this process limit, direct or shape the individual, whether deliberately or not, include parents, other adults, and peers.[5] If successful, enculturation results in competence in the language, values and rituals of the culture.[5] (compare acculturation, where a person is within a culture different to their normal culture, and learns the requirements of this different culture).

Multimedia learning

Multimedia learning is where a person uses both auditory and visual stimuli to learn information (Mayer 2001). This type of learning relies on dual-coding theory (Paivio 1971).

E-learning and augmented learning

Electronic learning or e-learning is a general term used to refer to Internet-based networked computer-enhanced learning. A specific and always more diffused e-learning is mobile learning (m-learning), which uses different mobile telecommunication equipment, such as cellular phones.

When a learner interacts with the e-learning environment, it's called augmented learning. By adapting to the needs of individuals, the context-driven instruction can be dynamically tailored to the learner's natural environment. Augmented digital content may include text, images, video, audio (music and voice). By personalizing instruction, augmented learning has been shown to improve learning performance for a lifetime.[6]

Rote learning

Rote learning is a technique which avoids understanding the inner complexities and inferences of the subject that is being learned and instead focuses on memorizing the material so that it can be recalled by the learner exactly the way it was read or heard. The major practice involved in rote learning techniques is *learning by repetition*, based on the idea that one will be able to quickly recall the meaning of the material the more it is repeated. Rote learning is used in diverse areas, from mathematics to music to religion. Although it has been criticized by some schools of thought, rote learning is a necessity in many situations.

Informal learning

Informal learning occurs through the experience of day-to-day situations (for example, one would learn to look ahead while walking because of the danger inherent in not paying attention to where one is going). It is learning from life, during a meal at table with parents, play, exploring, etc.

Formal learning

Formal learning is learning that takes place within a teacher-student relationship, such as in a school system.

A depiction of the world's oldest continually operating university, the University of Bologna, Italy

Nonformal learning

Nonformal learning is organized learning outside the formal learning system. For example: learning by coming together with people with similar interests and exchanging viewpoints, in clubs or in (international) youth organizations, workshops.

Nonformal learning and combined approaches

The educational system may use a combination of formal, informal, and nonformal learning methods. The UN and EU recognize these different forms of learning (cf. links below). In some schools students can get points that count in the formal-learning systems if they get work done in informal-learning circuits. They may be given time to assist international youth workshops and training courses, on the condition they prepare, contribute, share and can proof this offered valuable new insight, helped to acquire new skills, a place to get experience in organizing, teaching, etc.

In order to learn a skill, such as solving a Rubik's cube quickly, several factors come into play at once:

- Directions help one learn the patterns of solving a Rubik's cube.
- Practicing the moves repeatedly and for extended time helps with "muscle memory" and therefore speed.
- Thinking critically about moves helps find shortcuts, which in turn helps to speed up future attempts.
- The Rubik's cube's six colors help anchor solving it within the head.
- Occasionally revisiting the cube helps prevent negative learning or loss of skill.

Tangential learning

Tangential learning is the process by which some portion of people will self-educate if a topic is exposed to them in something that they already enjoy such as playing a musical instrument.

Dialogic learning

Dialogic learning is a type of learning based on dialogue.

Domains of learning

Benjamin Bloom has suggested three domains of learning:

- Cognitive – To recall, calculate, discuss, analyze, problem solve, etc.
- Psychomotor – To dance, swim, ski, dive, drive a car, ride a bike, etc.
- Affective – To like something or someone, love, appreciate, fear, hate, worship, etc.

These domains are not mutually exclusive. For example, in learning to play chess, the person will have to learn the rules of the game (cognitive domain); but he also has to learn how to set up the chess pieces on the chessboard and also how to properly hold and move a chess piece (psychomotor). Furthermore, later in the game the person may even learn to love the game itself, value its applications in life, and appreciate its history (affective domain).[7]

Mathematical models of learning

For mathematical models of learning, see:

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See also

- Animal cognition
- Aptitude
- Developmental Psychology
- History of education
- Intelligence
- Learning disability
- Learning speed
- Open learning
- Implicit learning
- Machine learning
- Malleable intelligence
- Organizational learning
- Pedagogy
- Reasoning
- Sequence learning
- Sleep and learning
- Study skills
- Team-based learning
- Ubiquitous learning

Notes

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Secondary education

Secondary education is the stage of education following primary school. Secondary education is generally the final stage of compulsory education. However, secondary education in some countries includes a period of compulsory and a period of non-compulsory education. The next stage of education is usually college or university. Secondary education is characterized by transition from the typically compulsory, comprehensive primary education for minors to the optional, selective tertiary, "post-secondary", or "higher" education (e.g., university, vocational school) for adults. Depending on the system, schools for this period or a part of it may be called ***secondary schools***, *high schools*, *gymnasia*, *lyceums*, *middle schools*, *colleges*, *vocational schools* and *preparatory schools*, and the exact meaning of any of these varies between the systems.

Secondary education by country

Argentina

The school system is free and mandatory.

Australia

School is compulsory in Australia between the ages of five/six-fifteen/sixteen or seventeen, depending on the state, with, in recent years, over three-quarters of people staying on until their thirteenth year in school. Government schools educate about two-thirds of Australian students, with the other third in independent schools, a proportion which is rising in many parts of Australia. Government schools are free although most schools charge what are known as "voluntary" contributions, while independent schools, both religious and secular, charge fees. Regardless of whether a school is government or independent, it is required to adhere to the same curriculum frameworks. Most

school students, be they in government or independent school, usually wear uniforms, although there are varying expectations.

Each State and Territories has its own format of Year 12 Matriculation:

- Australian Capital Territory: ACT Year 12 Certificate
- South Australia: South Australian Matriculation / South Australian Certificate of Education (SAM/SACE)
- Northern Territory: Senior Secondary Studies Certificate / Northern Territory Certificate of Education (NTCE)
- Queensland: Queensland Certificate of Education (QCE)
- New South Wales: Higher School Certificate (HSC)
- Tasmania: Tasmanian Certificate of Education (TCE)
- Victoria: Victorian Certificate of Education (VCE)
- Western Australia: Western Australian Certificate of Education (WACE)

Brazil

In Brazil, high school is officially called *Ensino Médio* (formerly *Segundo Grau*) and is also informally known as *colegial*. It is the last phase to basic education. Brazilian high school lasts 3 years, attempting to deepen what students have learned in the *Ensino Fundamental*. Brazilian high school students are referenced by their year – 1st, 2nd and 3rd years.

Unlike other countries, Brazilian students don't have a final test to conclude studies. Their approval depends only on their final grade on each subject. Each university elaborates its own test to select new students – this test, the *vestibular*, generally happens once a year. Enem, a non-mandatory national exam, evaluates high school students in Brazil and is used to rank both private and public schools.

The best scores in vestibular and in Enem [1] and the best universities are concentrated on the Southern region of the country, mainly in the states of São Paulo, Rio de Janeiro, Minas Gerais, Espírito Santo, Rio Grande do Sul, Santa Catarina and Paraná, and in the Federal District. The lack of funds and historical and social problems contribute to poor attendance from the students, especially those in public schools. Nevertheless, some are national models, such as the Colégio Pedro II, named after the 19th century emperor.

Private establishments, on the other hand, may be recognized as academically excellent or merely as investments in social networking. Schedules vary from school to school. The subjects taught, however, are conceived by the *Ministério da Educação* (Ministry of Education) which emphasises the hard sciences.

The educational year begins in February and finishes in December; institutions are permitted to define their own actual start and end dates. They must, however, provide at least 200 days of classes per year.

Universities are also divided into public and private. At this level, public ones are considered excellent and their vestibular exam is highly competitive (the exam for med school in UNICAMP may hit 300 candidates per place). For better preparation, therefore, many students take a *curso pré-vestibular* (university preparation course), which is offered by large private high schools.

Czech Republic

The Czech school system is, due to historic reasons, almost the same as the German school system. The school system is free and mandatory to age 16. After the *Základní škola* (Elementary School) in age of 16 , students are directed to three different optional secondary education schools:

- **Střední odborné učiliště (SOU)** - designed for students going into a trade (e.g., carpentry, masonry, auto-mechanic etc.) Education is **3 years long** and **entrance exam free**, combined with practice(one week study in school/one week practice in factory, bakery,building site... etc.), finished with a certificate.
- **Střední odborná škola (SOŠ)** - designed for students going into a profession (accountant, technician, kindergarten teacher..) and finishes with *maturita* as exit exam. The leaving exam consist of 2 compulsory and 2

optional subjects. Compulsory subjects are *Czech language and World Literature* and *one other language*. Optional ones depend on the type of school (mathematics, physics, accounting, etc.) The study is **4 years long** and you need to pass an entrance exam (Czech Language and Mathematics or Physics, varies with the type of school)

- **Gymnasium (Gym)** - designed for students going to university/college and finishes with a *maturita* exam. Also with two mandatory subjects *Czech language and World Literature* and *one other language*. Optional subjects vary, usually between humanistic and science. The study is **4, 6 or 8 years long**. In case of 6 (8) years one, the pupils finish elementary school two (four) years earlier and this two (four) years has harder studying programme on Gymnasium. There are also entry exams to all these programmes.

The *maturita* is required for study in University. The Abitur from Gymnasium is better for Humanistic pointed University and SOŠ Abitur is better for Technical pointed university.

Denmark

In Denmark it is mandatory to receive education answering to the basic school syllabus until the 10th year of school education. Since 2009 has it been compulsory also to attend pre-school. Furthermore can pupils choose a 11th year of school. After the basic school choose the majority of pupils between ages 15-19 usually to go through the "Gymnasium", which is University-preparatory. If not attending Gymnasium, the most common alternative is attending vocational training. There are over 100 different vocational courses in Denmark.

Finland

The Finnish education system is a comparatively egalitarian Nordic system. This means for example no tuition fees for full-time students and free meals are served to pupils. There are private schools but they are made unattractive by legislation.

The second level education is not compulsory, but an overwhelming majority attends. There is a choice between upper secondary school (*lukio*, *gymnasium*) and vocational school (*ammatillinen oppilaitos*, *yrkesinstitut*). Graduates of both upper secondary school and vocational school can apply to study in further education (University and Polytechnics).

Upper secondary school, unlike vocational school, concludes with a nationally graded matriculation examination (*ylioppilastutkinto*, *studentexamen*). Passing the test is a *de facto* prerequisite for further education. The system is designed so that approximately the lowest scoring 5% fails and also 5% get the best grade. The exam allows for a limited degree of specialization in either natural sciences or social sciences. The graduation is an important and formal family event, like christening, wedding, and funeral.

In the OECD's international assessment of student performance, PISA, Finland has consistently been among the highest scorers worldwide; in 2003, Finnish 15-year-olds came first in reading literacy, science, and mathematics; and second in problem solving, worldwide. The World Economic Forum ranks Finland's tertiary education #1 in the world.[2]

Germany

The German school system is free and compulsory through age 18. After the *Grundschule* (elementary school lasting 4–6 years), teachers recommend each pupil for one of three different types of secondary education. Parents have the final say about which school their child will attend.

- Hauptschule - designed for students going into trades such as construction; complete after 9th or 10th grade. During apprenticeships, pupils then attend Berufsschule, a dual-education vocational high school. The Hauptschule has been subject to significant criticism, as it tends to segregate the children of immigrants with schoolmates whose German is also poor, leading to a cycle of poverty.
- Realschule - designed for students who want to apprentice for white-collar jobs not requiring university studies, such as banking; complete after 10th grade. Those who change their minds and decide to attend university can proceed after testing to:
- Gymnasium - academic preparatory school for pupils planning to attend universities or polytechnics. Some offer a classical education (Latin, Greek), while others concentrate on economics and the like. The curriculum leading to the Abitur degree were recently reduced from 13th grade to 12th grade ("G8," eight years of Gymnasium).

The Gesamtschule (comparable to American schools) puts all pupils in a single building, combining the three main types; these are still quite rare.

Students with special needs are assigned to Förderschule or Sonderschule.

Hong Kong

secondary school (中學, Cantonese: *jung1 hok6*), *college* (書院)

Secondary education in Hong Kong is largely based on the British education system. Secondary school starts in the seventh year, or Form One, of formal education, after Primary Six. Students normally spend five years in secondary schools, of which the first three years (Forms One to Three) are compulsory like primary education. Forms Four and Five students prepare for the Hong Kong Certificate of Education Examination (HKCEE), which takes place after Form Five. Students obtaining a satisfactory grade will be promoted to Form Six. They then prepare for the Hong Kong Advanced Level Examination (HKALE) (colloquially *the A-levels*), which is to be taken after Form Seven. The HKALE and HKCEE results will be considered by universities for admission. Some secondary schools in Hong Kong are called 'colleges'. In some schools, Form Six and Form Seven are also called Lower Six and Upper Six respectively.

The HKCEE is equivalent to the British GCSE and HKALE is equivalent to the British A-level.

As of October 2004, there has been heated discussion on proposed changes in the education system, which includes (amongst others) reduction of the duration of secondary education from seven years to six years, and merging the two exams HKCEE and HKALE into one exam. The proposed changes will take effect in 2010.

India

In India, Before The Indian Constitutional Amendment in 2002, Article 45 (Articles 36 - 51 are on Directive-Principles of State Policy) of the Constitution was- “Art.45. Provision for free and compulsory education for children.—The State shall endeavour to provide,within a period of ten years from the commencement of this Constitution, for free and compulsory education for all children until they complete the age of fourteen years.” But that Constitutional obligation was time and again deferred - first to 1970 and then to 1980,1990 and 2000. The 10th Five-year Plan visualizes that India will achieve the Universal Elementary Education by 2007. However, the Union Human Resource Development Minister announced in 2001 that India will achieve this target only by 2010. (Ninety-third Amendment) Bill, 2002, renumbered as the Constitution (86th Amendment) Act, 2002, which was passed on 12 Dec 2002 stated: An Act further to amend the Constitution of India. . BE it enacted by Parliament in the Fifty-third Year of the Republic of India as follows:- 1. Short title and commencement. (1) This Act may be

called the Constitution (Eighty-sixth Amendment) Act, 2002. (2) It shall come into force on such date as the Central Government may, by notification in the Official Gazette, appoint. 2. Insertion of new article 21A.- After article 21 of the Constitution, the following article shall be inserted, namely Right to education.- "Art.21A. The State shall provide free and compulsory education to all children of the age of six to fourteen years in such manner as the State may, by law, determine.". 3. Substitution of new article for article 45.- For article 45 of the Constitution, the following article shall be substituted, namely:- Provision for early childhood care and education to children below the age of six years. "Art.45. The State shall endeavour to provide early childhood care and education for all children until they complete the age of six years.". 4. Amendment of article 51A. - In article 51A of the Constitution, after clause (J), the following clause shall be added, namely:- "Art.(k) who is a parent or guardian to provide opportunities for education to his child or, as the case may be, ward between the age of six and fourteen years.".

On the basis of Constitutional mandate provided in Article 41, 45, 46, 21A and various judgments of Supreme Court the Government of India has taken several steps to eradicate illiteracy, improvement the quality of education and make children back to school who left the school for one or the reasons. Some of these programmes are National Technology Mission, District Primary Education Programme, and Nutrition Support for Primary Education, National Open School, Mid- Day Meal Scheme, Sarva Siksha Abhiyan and other state specific initiatives. Besides, this several states have enacted legislation to provide free and compulsory primary education such as- the Kerala Education Act 1959, the Punjab Primary Education Act 1960, the Gujarat Compulsory Primary Education Act 1961, U.P. Basic Education Act 1972, Rajasthan Primary Education Act 1964, etc.

However, the Constitution of India and Supreme Court have declared that the education is now a fundamental right of the people of India,

Historical background

India has a long tradition of organized education. As a historian has put it, “There is no other country where the love of learning had so early an origin or has exercised so lasting and powerful an influence.” However, educational effort in the country has come a long way from this traditional position in its definition, coverage as well as impact.The current educational system in the country operates in an altogether different context from the classical past. The country's commitment to the provision of education for all and its endeavor to achieve this goal in a speedy fashion has to be seen in this complex milieu within which the educational system is currently functioning.

As the veteran educationist Shri J.P.Naik put it: “The Indian Society, especially the Hindu Society has been extremely inegalitarian, and this (provision of equality of educational opportunity) is the one value on the basis of which the society can be humanized and strengthened. In fact, the issue is so crucial that the Indian society cannot even hope to survive except on the basis of an egalitarian reorganization”. Between 1813 and 1921, the British administrators laid the foundations of the modern educational system. The principal positive contribution of the British administrators to equality was to give all citizens open access to educational institutions maintained from or supported by public funds. For instance, the worst difficulties were perhaps encountered when the problem of educating the “untouchable” castes came up.

The first test case arose in 1856 when a boy from an untouchable caste applied for admission to the government school at Dharwar. He was refused admission on the ground that it would result in the withdrawal of all the caste Hindu children from the school and thus in the closure of the school itself. But the decision was sharply criticized by the Governor General of India as well as by the Court of Directors in the East India Company and a clear policy was laid down that no untouchable child should be refused admission to a government school even if it meant the closure of the school (Report of the Indian Education Commission, 1882). The British administrators thus established, firmly and unequivocally, the right of every child irrespective of caste, sex or traditional taboos, to seek admission to all schools supported or aided by public funds. The British administrators refused to accept the principle of compulsory elementary education. The Indian nationalist thought, however, was firmly of the view that the provision of equality of educational opportunity must include a certain minimum general education to be provided to all children on a free and compulsory basis. A demand that four years of compulsory education (which would ensure effective literacy)

should be provided to all children was put forward, for the first time before the Indian Education Commission by the Grand Old Man of India, Dadabhai Naoroji in 1881. Gopal Krishna Gokhale who moved a resolution on the subject in the Central Legislative Assembly in 1910 and again took the proposal vide a bill in 1912, neither of which achieved their objective. At this stage, it is illuminating to read the then announced Indian Educational Policy,

1913. It begins as under: "His Most Gracious Imperial Majesty the King Emperor, in replying to the address of the Calcutta University on the 6th January 1912, said: -

"It is my wish that there may be spread over the land a network of schools and colleges from which will go forth loyal and manly and useful citizens, able to hold their own in industries and agriculture and all the vocations in life. And it is my wish too, that the homes of my Indian subjects may be brightened and their labour sweetened by the spread of knowledge with all that follows in its train, a higher level of thought, comfort and of health. It is through education that my wish will be fulfilled, and the cause of education in India will ever be very close to my heart."

The Government of India, have decided, with the approval of the Secretary of State, to assist Local Governments, by means of large grants from imperial revenues as funds become available', to extend comprehensive systems of education in the several provinces. Each province has its own educational system, which has grown up under local conditions and become familiar to the people as a part of their general well being. In view of the diverse social conditions in India there cannot in practice be one set of regulations and one rate of progress for the whole of India. Even within provinces there is scope for greater variety in types if institutions that exists today. The Government of India have no desire to deprive Local Governments of interest and initiative in education. But it is important at intervals to review educational policy in India as a whole. Principles, bearing on education in its wider aspects and under modern conditions and conceptions, on orientalia and on the special needs of the domiciled community, were discussed at three important conferences of experts and representative non-officials held within the last two years. These principles are the basis of accepted policy. How far they can at any time find local application must be determined with reference to local conditions.

On the question compulsory and free elementary education, the Policy stated: The public demand for compulsory primary education continued however to grow, and between 1918 and 1931 compulsory education laws were passed for most parts of the country by the newly elected State legislatures in which Indians were in majority. In 1937, Mahatma Gandhi put forward his scheme of Basic Education under which education of seven or eight years duration was to be provided for all children and its content was to be revolutionized by building it round a socially useful productive craft. As a result of all these efforts, the idea that it was the duty of the state to provide free and compulsory education to all children till they reached the age of 14 years was nationally accepted as an important aspect of the overall effort to provide equality of opportunity. Under the wise leadership of Sir John Sargent, the then educational adviser to the Government of India, these ideas were accepted by the British administrators and the Post-war Plan of educational development in India (1944) known popularly as the Sargent Plan, put forward proposals to provide free and compulsory basic education to all children in the age group 6-14 over a period of 40 years. (1944–1984). The nationalist opinion did not accept this long period, and a committee under the chairmanship of B.G.Kher proposed that this goal could and should be achieved in a period of 16 years (1944–1960). It was this recommendation that was eventually incorporated in the Constitution as a Directive Principle of State Policy. It was thus not a mere statement of an ideal, but a well-thought out enunciation of a policy, which is yet to be implemented though a substantial component was sought to be achieved by 2000 under the Education for All plan.

A core curriculum is emphasized at the elementary school level. This is a carefully planned curriculum that in content it compares favourably with those adopted in a number of other countries. A common core can help in overcoming discrepancies between the educational opportunities of urban and rural people, and that of men and women, but it cannot eliminate those difficulties unless literacy rates improve, greater participation occurs in school and other changes take place in society.

In addition to the regular statistical return system, which is regularly compiled and published under the heading Education in India each academic year (There are normally 16 Tables. These statistics are also followed by 5 or 6

illustrations), there are also two expert institutions under the aegis of the Ministry of Human Resource Development, viz. National Council of Educational Research and Training (NCERT) and National Institute of Educational Planning and Administration (NIEPA) which carry out regular research and surveys, and in-depth analyses.

Adult Education – Historical background and review of achievements.

Eradication of illiteracy has been one of the major national concerns of the Government of India since independence. During the first Five Year Plan, the program of Social Education, inclusive of literacy, was introduced as part of the Community Development Program (1952).

Efforts of varied types were made by the States for the spread of literacy. Among these, the Gram Shikshan Mohim initiated in Satara District of Maharashtra in 1959 was one of the successful mass campaigns. It aimed at completing literacy work village-by-village within a short period of 3 to 6 months, through the honorary services of primary teachers and middle-school and high school students, supported by the entire community. It achieved a good deal of success but suffered from the lack of follow-up due to financial constraints and some of its good work was lost as a consequence. In spite of these varied initiatives the program of adult literacy did not make much headway.

The topic was dealt at length by the Kothari Commission (1964–66) which emphasized the importance of spreading literacy as fast as possible. The Commission also observed that "literacy if it is to be worthwhile, must be functional". It suggested the following measures: ·Expansion of universal schooling of five-year duration for the age group 6 - 11. ·Provision of part-time education for those children of age group 11 - 14 who had either missed schooling or dropped out of school prematurely. ·Provision of part-time general and vocational education to the younger adults of age group 15 – 30. ·Use of mass media as a powerful tool of environment building for literacy. ·Setting up of libraries. ·Need for follow up program. ·Active role of universities and voluntary organisation at the State and district levels.

The National Policy on Education in 1968 not only endorsed the recommendations of the Education Commission but also reiterated the significance of universal literacy and developing adult and continuing education as matters of priority. While the formal elementary education program was supplemented by a Non-formal Education system, it was also decided to undertake Adult Literacy programs culminating in the Total Literacy mission approach.

A multi-pronged approach of universalization of elementary education and universal adult literacy has been adopted for achieving total literacy. The National Policy on Education (1986) has given an unqualified priority to the following three programs for eradication of illiteracy, particularly among women:- (a) Universalization of elementary education and universal retention of children up to 14 years of age. (b) A systematic program of non-formal education in the educationally backward states. (c) The National Literacy Mission which aims at making 100 million adults literate by 1997.

The major thrust of these programs is on promotion of literacy among women, members belonging to Scheduled Castes and Scheduled Tribes particularly in the rural areas. The Adult Education Program consists of three components: basic literacy (including numeracy), functionality and civic awareness. The program covers different schemes so that finally it aims at helping learners achieve a ‘reasonable degree of self-reliance in literacy and functionality and better appreciation of the scope and value of science.

Of course, even before Independence, there were adult education programs. Mahatma Gandhi had education as one of his constructive programs, and as a mass campaign had through his movement, tried to make districts completely literate. Some success was also achieved. For instance Surat District, in erstwhile Bombay Presidency had been totally literate, but again relapsed into illiteracy for lack of follow-up. There were efforts at spreading by the Baroda Rulers, supplemented by a live library movement. Here again lack of follow-up and sustained efforts caused a relapse into illiteracy among the vulnerable sections. There were voluntary agencies working in the field. Some agencies as the Karnataka Adult Education Council, Gujarat Social Education Committee and Bombay City Social Education Committee has had large programs extending to the whole state or a metropolitan city. Literacy House of Lucknow did commendable work in this field. It came into existence in 1953 when its founder, Mrs. Welthy H. Fisher established it in small verandah at Allahabad, with a view to eradicate illiteracy and promote education in

India. It was shifted to Lucknow in 1956.

The University Grants Commission, at its meeting held in 5 May 1971, considered the general pattern of development and assistance towards adult education in the university and agreed that "assistance to universities for program of adult education be made on a sharing basis of 75:25 and that the Commission's assistance to university would not exceed Rs. 3 lakhs for the Fourth Plan period." Departments of Continuing Education took up the work of "University goes to Masses". The slogan "Each One, Teach One" caught the imagination of not only the students, but also a large number of educated individuals, and it looked like these programs will meet a major success. However, like most enthusiastically launched programs, they also fell by the wayside. A Farmers Training and Functional literacy project was launched in 1968-69, coordinating the activities of Ministries of Education, Agriculture and Information & Broadcasting. The Central Advisory Board of Education in its November 1975 meeting asked that the exclusive emphasis on formal system of education should be given up and a large element of non-formal education should be introduced within the system.

In one sense, though the Non-formal education system was launched with its own set of objectives, the main purpose was to tackle the problem of dropouts from the formal system. The dropout from the formal system continues to hover around 50% and have not shown any great variation in the last four decades (Dropout rate ranging in Grades I-IV from 64.0 in 1960-61, to 67 in 70-71, to 58.7 in 1980-81 to 44.3 in 1990-91. The dropout rate in Grades V-VIII ranged from 74.3 to 63.4 during these decades). It is not difficult to guess the collective identities of the victims, children who fail to survive at school. They are children of landless agricultural labourers and subsistence peasants. Caste-wise, a substantial proportion of them belongs to the Scheduled Castes that have been granted special rights including reservation in higher education and representative bodies, in the Constitution. The situation of children belonging to many of the Scheduled Tribes is worse, especially in the central Indian belt. Forest-dwelling tribal communities have had to bear the brunt of State initiatives in dam construction, development of tourism with the help of game sanctuaries and mining. Apart from such destabilizing experiences, bias against tribal cultures and languages also makes the school curriculum and the teacher a deterrent for the advancement of tribal education. There are about 40 million rural artisans in India. For them, the current standard school curriculum is trivial, and in a sense irrelevant and demeaning. No wonder, one realizes in a rather simple, unscientific way, these children stop coming to school early. Finally, the child residing in a slum, living in conditions of uncertainly and violence is always a likely case of early withdrawal or elimination.

In keeping with recent trends in the international literacy movement, the emphasis of mass literacy programs in India shifted from 'literacy' to 'adult education' through the intermediate phases of 'functional literacy' and 'non-formal education' during the last fifty years. The Policy Statement of the present program highlights the development of functional competencies and awareness of the adult learners as two of the three equally important components of the National Adult Education Program (1978). The third component is obviously literacy. Our Universities had also been roped into this activity.

The National Adult Education Program (NAEP) was inaugurated on October 2, 1978. In a statement in the Parliament on April 5, 1977, the Union Education Minister declared that "along with universalization of elementary education, highest priority in educational planning would be accorded to adult education." The objective of the NAEP is "to organise adult education programs, with literacy as an indispensable component, for approximately 100 million illiterate persons in the age-group 15-35 with a view to providing them with skills for self-directed learning leading to self-reliant and active role in their own development and in the development of their environment." In concrete terms, three R's, social awareness and functionality are the three basic components of the NAEP. In spite of careful planning before the launch of this program (it had envisaged a phased program), the Sardar Patel Institute of Social and Economic Research, after a survey carried out in the initial flush of enthusiasm, observed about the progress of the program in a progressive state like Gujarat: "On the whole, while the NAEP in Gujarat was generally found to be addressed to the target groups kept in view under the NAEP and it was found to have some other commendable aspects, all things considered, its achievement in terms of spread of literacy is rather modest, and more

so in terms of social awareness and functionality". The report had gone on to say: "The more crucial aspects like the content of education, pedagogy, etc. can be probed into only if longer time is available, or ideally, on an ongoing basis. It is these aspects which have contributed most to the continuing stagnation of even the spread of literacy in the country. This study is not sufficient to indicate whether breakthrough in these areas is being made, and whether the adult education program is assuming the character of a Mass Movement as would be desirable and is clearly the intent of NAEP" (1979).

Then came the National Literacy Mission (NLM). For a short while during the era of the high profile technology missions, some attention was given to issues like immunization, safe drinking water and literacy along with talk of people's participation and social audit of these programs. In 1989, the district-based Total Literacy Campaigns (TLC) emerged as a program strategy for the National Literacy Mission against this background. While it was correctly envisaged that the initial social mobilization for a time-bound campaign provides the inspiration to spark for a mass participation of people, volunteering their time and energy for a cause like literacy, the follow-up program was not worked out clearly. However, admitting and recognizing the many flaws and failures of the 'campaign approach', even as early as1994, NLM continued with the same TLC strategy and tried to bolster it with better monitoring, internal evaluation and presently with a revival effort through what is called 'Operation Restoration'. Reviewing the functioning of these programs, Avik Ghosh concludes: "The present focus of NLM on literacy has to shift, and similarly the mission-mode-time-bound thrust of NLM should give way to a more durable and sustained program of adult education that responds to the needs of adults as individuals and also as members of the disadvantaged groups". The Total Literacy Campaigns, initially at least, helped in fostering a participatory approach in dealing with this issue, though here again, the problem of sustaining the momentum has remained. In the budget for 1999–2000, allocation for the Rural Functional Literacy Project does not find a special mention. The overall allocation to adult education has, however, been increased by about 40%.

Unless it be in the context of revolutionary social transformation, the lack of spectacular success in a program like Adult Education and of sustaining its momentum is understandable. It is after all a far distant cousin in terms of financial outlays to the formal system (In the budget of 1999-2000, the total allocation of resources (both Plan and non-plan) for the four programs of Elementary Education, Operation Black board, Non-formal education and Adult Education was respectively, 3037, 400, 350 and 113.4 crores respectively). Further, there is the very real problem of pedagogy. For instance, as Prof. Jalaluddin (1986) says: "While 1652 mother tongues have been identified in the recent censuses in India, only 15 major literary languages have been accorded political status under the Eighth Schedule of the Indian Constitution. Then there is the problem of script. In the context of a nationwide adult literacy and education program, the question of the acquisition of more than one writing system or even script by linguistic minorities becomes an important area of language planning. The term biliteracy is used in this context in India." Further in countries like India which have a long tradition of transmission of ideas and wisdom orally, such individual and societal transformations through a mass literacy campaign, are rather a form of renewal in nature than being additive or extensive". There is also the problem continued sustenance of the campaign approach. There are some hopeful signs of ICT-supported services being used to bridge the gulf. Some collaborative partnership of the Government of India and non-governmental agencies in partnership with International Organizations and private sector has been mooted and the results of such collaborative efforts may perhaps show a way.

And yet, the importance of this component cannot be gainsaid. "In our country, numerous persons enter adulthood without proper education and consequently their self-confidence is shaky. In a fast-changing environment of economic and cultural change, they will continue to be edged out unless their capacities are actively consolidated and improved so as to encounter the world outside on equal terms". This program can be in the nature of a Sunset program (referred to later in this Paper); but till then, i.e. literacy becomes self-sustaining fact with self-arising demand for its very usefulness and need for a fuller life, no Government should be allowed to ignore this aspect.

INTO THE FUTURE

The need to go into a learning mode as also conditions for creating capabilities in the education system to meet the needs of knowledge growth, communication expansion, reinforcement of cultural roots is indicated. Changing needs of Educational Technology and entry of computers and Integration of Information and Communication Technology demand new structures, which the system should be able to assimilate. Renewal of education also calls for provision for regular reviews, which reckons also changing scenarios and developments in emerging technologies.

In a UNESCO publication, "Education in Asia and the Pacific", Raja Roy Singh has rightly written: "The dynamics of education and its role in each society in development and transformation make it essential that education continuously renews itself in order to prepare for a future rather than for obsolescence. This renewal process derives from a variety of sources which include: the growth of human knowledge, which is the basic component of education; the heritage of collective experience and values which education transmits to the new generations; the means and methods of communication by which knowledge and values are transmitted and the new values and aspirations which the human spirit adds to the collective experience and wisdom of the past or by which the heritage of the past is reinterpreted and reassessed."

Current Literacy Programs

1.Rural Functional Literacy Project (RFLP): Adult Education Centres are set up by RFLP in all the States and Union Territories. They are fully funded by the Central Government although the State Governments and Union Territory Administrations are responsible for its implementation.

2.State Adult Education Program (SAEP): Funded fully by the State Governments, this program aims at strengthening ongoing Adult Education Programs and expanding its coverage to ensure that the programs reach women and other underprivileged groups.

3.Adult Education through Voluntary Agencies: A Central Scheme of Assistance to Voluntary Agencies exists to facilitate the participation of Voluntary Agencies. The Government of India provides financial grants to Voluntary Agencies on program basis.

4.Involvement of students and youth in Adult Education Programs. The University Grants Commission provides 100 per cent financial assistance to colleges and universities to support their active involvement in literary and adult education activities. Specifically, 50,000 adult education centres are expected to be organized under this program. Simultaneously with the adult education program, the college and university students will be engaged in spreading universal primary education among non-school-going children.

5.Nehru Yuvak Kendras: This non-student youth organization has been developing training programs to educate young people according to their identified felt needs.

6.Non-Formal Education for Women and Girls: This project puts special emphasis on improving women's socio-economic status by ensuring their participation in development programs in addition to efforts for family planning and promotion of welfare of children. This program is a joint effort of the Government of India and UNICEF.

7.Shramik Vidyapeeths: This program has been established and ever since funded by the Government of India with the aim to provide integrated education to urban and individual workers and their families in order to raise their productivity and enrich their present life.

8.Central Board for Workers Education : This program aims at providing literacy to unskilled and semi-skilled persons as well as raising their awareness and functionality. Its special feature is to meet the recognized needs of the workers with a specially matched program.

9.Functional Literacy for Adult Women : Started in the International Year of Women, under the sponsorship of the Government of India, this program covers health and hygiene, food and nutrition, home management and child care, education, and vocational and occupational skills.

10.Incentives Awards Scheme for Female Adult Literacy : designed to promote literacy among 15-35 year old women, this scheme presents awards to adult education centres (at the district, and Union Territory levels). At the

State level, the awards are intended for equipments of various kinds as well as training facilities.

11.Post-Literacy and Follow-up Program : The program has been in operation since 1984-1985. The Directorate of Adult Education has developed broad guidelines for the preparation of neo-literate materials for the State Governments and State Resource Centres. Prototype neo-literate materials have also been produced.

The listed activities reflect India's determination to make the entire population literate by involving the other Government agencies related to development as well Universities and Voluntary Organization in literary activities. The responsibility for planning and financing these activities, however, rests with the Central and State Governments.

Education System in India:

The education system in India has savored a special bond between the teacher and the pupil since time unknown. In fact, India was the country to have established what we know as the 'gurukul' system of education. However, with the coming of the Britishers, English has become a part and parcel of Indian education system. Today English is the third major medium of instruction in India after Hindi and Marathi.

The present education system in India mainly comprises primary education, secondary education, senior secondary education and higher education. Elementary education consists of eight years of education. Each of secondary and senior secondary education consists of two years of education. Higher education in India starts after passing the higher secondary education or the 12th standard. Depending on the stream, doing graduation in India can take three to five years. Post graduate courses are generally of two to three years of duration. After completing post graduation, scope for doing research in various educational institutes also remains open.

With more than 17,000 colleges, 400 universities, 13 institutes of national importance and various other vocational institutes, the higher education system in India is one of the largest in the world.

However, it is the fast integrating world economy and corresponding rise of students mobility that have made studying in India an attractive option. There are a large number of Indian as well as foreign students who apply every year to Indian universities and colleges. For all those who wish to study in India, it is very important to get prior and correct information about the courses that you would like to undertake, the university you want to apply to and how to go about the application procedure. For an international student, it is also important to know the accommodation facilities, weather conditions, food habits and cost of living in the city in which he or she intends to study.

Education for the Marginalized in India:

As education is the means for bringing socio- economic transformation in a society, various measures are being taken to enhance the access of education to the marginalized sections of the society. One such measure is the introduction of the reservation system in the institutes of higher education. Under the present law, 7.5% seats in the higher educational institutes are reserved for the scheduled tribes, 15% for scheduled castes and 27% for the non creamy layers of the Other Backward Classes (OBCs). Under the Indian constitution, various minority groups can also set up their own educational institutes. Efforts are also being taken to improve the access to higher education among the women of India by setting up various educational institutes exclusively for them or reserving seats in the already existing institutes. The growing acceptance of distance learning courses and expansion of the open university system is also contributing a lot in the democratization of higher education in India.

Facilities for International Students in India

Surprises are always waiting as you enter any new place. One may take time adjusting him/ her in the new environment. It is normal to feel excited, confused and even overwhelmed. These problems are mainly faced by the international students when they arrive in India. They may face problems like language problem, accommodation problem and food problem and so on. But international student's offices at most of the institutes provide facilities for International Students in India that can ease their woes. Moreover the Government of India has also set up the Education Consultants of India to cater to the needs of the growing number of International Students in India.

Colleges and institutes The international students are required to carry the necessary documents along with them such as admission letter, passport, residence permit etc. The international students can avail the residential permit after registering themselves at the Foreigner's Registration Office (F.R.O) within a period of seven days from their arrival.

All over the country offer different courses for the international students. International students can apply for medical courses, engineering courses, applied arts courses etc. The government has reserved some seats for foreign students and students from other developing countries. International students can get admission through this reserved quota. For more information related to these admissions, the students can contact the Indian High Commission located in their countries.

Self-financing international students looking for admission to postgraduate courses can also choose from the various courses that are offered by the Indian universities. Apart from the Government of India, there are some private educational institutes that provide various facilities for international students in India.

The Government of India offers various scholarships annually to international students. These scholarships are offered to those who are interested in pursuing their studies in India. Some of the scholarships offered by the government are Cultural Exchange Program, Commonwealth Scheme, SAARC Scholarship Scheme and ICCR Scholarship Scheme.

Advantages of Studying in India:

India is fast becoming a major economic power in the world today. And if its growth trend continues for some more years, it would soon be playing a major role in the world economy along with China. This itself has been a major cause of attraction for many international students. Moreover, India's successful stint with democracy (except the years between 1975–1977) has also been a major magnetic force for scholars around the world. However, apart from knowing India well, there are some other advantages that are attracting students to study in India. Some of these are -

- Low Cost:

The cost of education in India is quite low as compared to many other countries of the world.

- Quality Education:

Quality of education is not uniform throughout the length and breath of the country. However, there are some educational institutes in India that provide world class education.Indian Institutes of Technology,All India Institute of Medical Science - AIIMS, Delhi. Armed Forces Medical College, Pune. Christian Medical College, Vellore. JIPMER, Puducherry. Jawaharial Nehru Medical College, AMU, Aligarh. National Institute of Fashion Technology NIFT – New Delhi. Maulana Azad Medical College, Delhi. Loyola College , Chennai. Indian Institutes of Management, Indian Institutes of Science, National Law Schools, Jawaharlal Nehru University, Presidency College , Chennai. Anna University , Chennai National Institute of Technology Tiruchirapalli Tamil Naidu, Madras University, Hyderabad University, Campus Law Center, Delhi University, Delhi. Faculty of Law,National Law School of India Univ, Bangalore. NALSAR University of Law, Hyderabad. National Law Institute University, Bhopal. National Law University, Jodhpur, Allahabad University Allahabad, Kumaon-University of Uttarakhand. Garwal-University of Uttarakhand. Banaras Hindu University Of Varanasi. CIHTS Sarnath (Central University of Tibetan Studies). Delhi University and are some such Institutes.The government of India is also speeding up the efforts to establish more such institutes that can offer quality education in India.

- Financial Assistance: Various scholarships, education loans and other financial aids are now available for studying in India today.
- Consultation Service: The government of India provides consultation service to the interested international students through Education Consultants of India (Ed.CIL). Thus one can get all the information about the Indian education system, cost of education, duration, visa, accommodation facilities even before landing up in India.
- Unique Courses: Apart from above mentioned advantages, one can also study some unique courses that were discovered and developed by the traditional knowledge system of India. Ayurveda, Sankrit, Yoga, Hindi are some

such courses that enthuse many international students.

Note-The right to education will be meaningful only and only if the all the levels education reaches to all the sections of the people otherwise it will fail to achieve the target set out by our Founder Father to make Indian society an egalitarian society.

Iraq

- Secondary Education in Iraq comprises TWO stages, each ending in Baccalaureate Examination
  - Intermediate three years
  - Preparatory three years.
- No student is admitted to college in Iraq before passing the Baccalaureate Examination held by this Ministry for Preparatory Schools.
- The maximum obtainable mark is 100, the minimum passing mark is 50.

Malaysia

The national secondary education in Malaysia, modelled after the (historical) English system, consists of 5 school years referred to as "forms" (*tingkatan* in Malay). Students begin attending secondary schools in the year they turn 13, after sitting for the UPSR (Ujian Pencapaian Sekolah Rendah or Primary School Assessment Examination) at the end of primary school. Students failing the academic requirement in UPSR are required to read an additional year called the Remove (*Peralihan*) year before they are allowed to proceed to Form 1. Automatic promotion up to Form 5 has been in place since 1996. Some secondary schools offer an additional two years known as *sixth form*, divided into *lower sixth* and *upper sixth*.

Forms 1 to 3 are known as Lower Secondary (*Menengah Rendah*), while Forms 4 and 5 are known as Upper Secondary (*Menengah Tinggi*). Streaming into Art, Science or Commerce streams is done at the beginning of the Upper Secondary stage. Students sit for a standardised test at the end of both stages; Penilaian Menengah Rendah (PMR) for Lower Secondary, and Sijil Pelajaran Malaysia (SPM, equivalent to the O-Level examination) for Upper Secondary. At the end of the sixth form, students sit for the Sijil Tinggi Pelajaran Malaysia or the Malaysian Higher School Certificate (equivalent to the A levels). The language of instruction in national secondary schools is Malay except for language, science and mathematics subjects. Science and mathematics subjects are taught in English since 2003, but Malay will be reintroduced in stages from 2012.

Mexico

Lower-secondary education (3 years) is considered part of basic education in Mexico and is compulsory. For entry, students are required to have successfully completed six years of primary education. The next stage, Upper-Secondary Education or Preparation School ("Preparatoria") is non-compulsory and has three pathways: General upper-secondary, Technical professional education, and Technological upper-secondary, as it has been called "Bachillerato" (For the full Secondary education 6 years) it has been frequently confused with the U.S.A. "Bachelors Level" which is called "Licenciatura o Ingeniería" in Latin American countries (well not all, as in Venezuela, the U.S.A. Bachelor´s Level is refereed as "Doctor".[3]

Netherlands

In The Netherlands, high school is called *middelbare school* (literally: "medium school") and starts right after the 6th grade of primary school (group 8). The pupils who attend high school are around the age of 12. Because education in the Netherlands is compulsory between the ages of 5 and 16 (and partially compulsory between the ages of 16 and 18), all pupils must attend high school.

The high schools are part of the *voortgezet onderwijs* (literally: "continued education"). The *voortgezet onderwijs* consist of 3 main streams: VMBO, which has 4 grades; HAVO, which has 5 grades; and VWO, which has 6 grades. Recommendation for a particular stream is done by means of a test (CITO) and the advice of the grade 6 teacher. The final choice for a stream remains with the pupil and his/her parents. It is possible to switch between streams and a pupil can also do HAVO after he/she has completed VMBO. The same is true for a pupil who wants to follow VWO education after having completed HAVO.

New Zealand

In New Zealand students attend secondary school from the ages from about 13 to 18. Formerly known as Forms 3 to 7, these grades are now known as Years 9 to 13. Schooling is compulsory until the student's 15th (with permission) or 16th birthday. In some areas of the country, secondary school is colloquially known as "college". NCEA is the Government-supported school qualification. New Zealand also has intermediate schools, but these cover the last two years of primary education (years 7 and 8) and are not secondary schools.

Pakistan

Secondary education in Pakistan begins from grade 9 and lasts for four years. Upon completion of grade 10, students are expected to take a standardised test administered by a regional Board of Intermediate and Secondary Education (or BISE). Upon successful completion of this examination, they are awarded a Secondary School Certificate (or SSC). This locally termed as 'matriculation certificate' or 'matric' for short. Students then enter a college and complete grades 11 and 12. Upon completion of grade 12, they again take a standardised test which is also administered by the regional boards. Upon successful completion of this test, students are awarded the Higher Secondary (School) Certificate (or HSC). This level of education is also called the F.Sc./F.A. or 'intermediate'. There are many streams students can choose for their 11 and 12 grades, such as pre-medical, pre-engineering, humanities (or social sciences) and commerce. Some technical streams have recently been introduced for grades 11 and 12.

Alternative qualifications in Pakistan are also available but not maintained by the BISE but by other examination boards. Most common alternative is the General Certificate of Education (or GCE), where SSC and HSC are replaced by Ordinary Level (or O Level) and Advanced Level (or A Level) respectively. Other qualifications include IGCSE which replaces SSC. GCE O Level, IGCSE and GCE AS/A Level are managed by British examination boards of CIE of the Cambridge Assessment and Edexcel of the Pearson PLC. Advanced Placement (or AP) is an alternative option but much less common than GCE or IGCSE. This replaces the secondary school education as 'High School Education' instead. AP exams are monitored by a North American examination board, College Board and can only be given under supervision of centers which are registered with the College Board, unlike GCE O/AS/A Level and IGCSE which can also be given privately.

Paraguay

In Paraguay, the secondary education is called *Educación Media*. After nine year of *Educación Escolar Básica* (Primary School), the student can choose to go to either a *Bachillerato Técnico* (Vocational School) or a *Bachillerato Científico* (High School), both are part of the *Educación Media' system. This two forms of secondary education last three years, and are usually located in the same campus called* Colegio. The *Bachillerato Técnico* combine general education with some specific subjects, referred to as pre-vocational education and career orientation. Some of the fields are mechanical, electricity, commerce, construction, business administration, etc.

After completing secondary education, one can enter to the universities. It is also possible for a student to choose both Técnico and Científico schooling.

Portugal

In Portuguese, the word for high school used to be *liceu*, it was now recently replaced for *Escola Secundária* (secondary school which includes 7th to 9th grade) and covers grades 10th to 12th. After completing High School students may choose to go to *Universidade* (University) or *Instituto Politécnico* (Polytechnic Institute). Also, students may choose to pursue an artistic career, in such case they may audition to the National Conservatory or one of Portugal's Art Schools. The Portuguese government is currently considering the extension of the Compulsory Education to the 12th grade, instead of the 9th. In High School, student can only move on to the next grade if they pass with a satisfactory CGPA (cumulative grade point average).

Republic of Ireland

In the Republic of Ireland secondary school starts at the age of 12, and lasts three or optionally five or six years. The main types of secondary school are: community schools, comprehensive schools, *colleges* (though this term is more usually applied to third-level institutions like universities), vocational schools, voluntary secondary schools and meánscoileanna (secondary schools that teach all subjects through Irish). After three years (age 14-16), every student takes a compulsory state exam known as the Junior Certificate. Typically a student will sit exams in 9 to 11 subjects; English (L1), Irish (L2), a Foreign Language (L3) and Mathematics are compulsory.

After completing the Junior Certificate, a student may continue for two years to take a second state exam, the Leaving Certificate, around age 17-18. Students typically take 6-8 subjects. Except in exceptional circumstances, subjects taken must include Irish (L1), English (L2), a foreign language (L3) and Mathematics. Leaving Certificate results directly determine admission to university via a ranking system managed by the CAO. More than 80% of students who complete the Junior Certificate continue to the Leaving Certificate.

There is an optional year in many secondary schools in Ireland known as Transition Year, which some students choose to take after completing the Junior Certificate, and before starting the Leaving Certificate. Focusing on broadening horizons, the year is often structured around student projects such as producing a magazine, charity work, running a small business, etc. Regular classes may be mixed with classes on music, drama, public speaking, etc. Transition Year is not formally examined but student progress is monitored by teachers on a continuous basis. Programs vary from school to school. This year also focuses on giving the children an insight into the working world through work experience placements.

In addition to the main school system, Ireland has a parallel system of vocational schools, which place less focus on academic subjects and more on vocational and technical skills - around 25% of students attend these. Many vocational schools also offer night classes to adults. There is also a prominent movement known as Gaelscoileanna where every subject is taught through the Irish Language, and these are growing fast in number.

Republic of Macedonia

High school in Republic of Macedonia is called "средно училиште" or "middle school", and the structure is left from the socialists period. Reforms are conducting at the moment, so the education would be appropriate with the most of the leading world countries.That means that there are still many forms. In general there is high school for preparing for every faculty on the university. There are: electro technical high school, mechanical high school, economics high school, pharmaceutical, medical,...and natural sciences and linguistics gymnasium. The high school is attended between the years of 14 and 18.

Russia

There were around 60,000 general education schools in 2007–2008 school year[4] ; this number includes ca. 5,000 advanced learning schools specializing in foreign languages, mathematics etc., 2,300 advanced general-purpose schools[5] and 1,800 schools for all categories of disabled children;[4] it does *not* include vocational technical school and technicums. Private schools accounted for 0.3% of elementary school enrolment in 2005 and 0.5% in 2005.[6]

According to a 2005 UNESCO report, 96% of the adult population has completed lower secondary schooling and most of them also have an upper secondary education.[7]

Singapore

Children attend Primary school for the first 6 levels, then secondary schools for the next 4/5 levels, which is followed by either *junior college* for 2 year courses or *centralised institutes* for 3-year courses.

Based on results of the Primary School Leaving Examination (PSLE), Singapore's students undergo secondary education in either the Special(Abolished in 2008), Express, Normal streams or the Integrated Programme (implemented in 2004). Both the Special and Express are 4-year courses leading up to a Singapore-Cambridge General Certificate of Education (GCE) 'Ordinary' - 'O' level examination. The difference between Special and Express is that the former takes higher Mother Tongue, which can be used as a first language in exams instead of the subject "mother tongue" that Express students take. However if some Express students can cope with higher Mother Tongue, they are allowed to used it as a first language in exams too.

The Normal stream is a four-year course leading up to a Singapore-Cambridge GCE "Normal" - "N" level examination, with the possibility of a 5th year followed by a Singapore-Cambridge GCE "Ordinary" - "O" level examination. It is split into "Normal (Academic)" and "Normal (Technical)" where in the latter students take subjects that are technical in nature, such as Design and Technology.

The Integrated Programme (IP) is a 6 year programme offered to the top 10 percent of the cohort to pass through the O level exams, and go straight to the affiliated JC.

After the second year of a secondary school course, students are typically streamed into a wide range of course combinations, making the total number of subject they have to sit for in "O" level six to ten subjects. This includes science (Physics, Biology and Chemistry), humanities (Elective Geography/History, Pure Geography/History, Social Studies, Literature, etc.) and additional mathematics subject at a higher level, or "combined" subject modules.

Some schools have done away with the O level examination, and pupils only sit for the A level examination or the International Baccalaureate at the end of their sixth year (known as Year 6 or Junior College 2).

Co-curricular activities have become compulsory at the Secondary level, where all pupils must participate in at least one core CCA, and participation is graded together with other things like Leadership throughout the four years of Secondary education, in a scoring system. Competitions are organised so that students can have an objective towards to work, and in the case of musical groups, showcase talents.[8]

Slovenia

In Slovenia, a variety of high-school institutions for secondary education exists one can choose in accordance with his or her interests, abilities and beliefs. The majority of them are public and government-funded, although there are some diocesan upper secondary schools and a Waldorf upper secondary school, which are private and require tuition to be paid.

Upper secondary schools (Sln. *gimnazije*) are the most elite and the most difficult high-school programmes, intended for the best students that wish to pursue university education in the future. They are further divided into general upper secondary schools, classical upper secondary schools, technical upper secondary schools, upper secondary schools for arts, and upper secondary schools for business. They all last for four years and conclude with a compulsory leaving examination (Sln. *matura*) that is a prerequsite for studying at universities. Their curricula

include a wide range of subjects that should deliver a broad general knowledge.

Technical high schools last for four years and cover a wide range of disciplines. They end with a vocational leaving examination and allow pupils to study at vocational or professional colleges.

Vocational high schools come in two varieties: the dual and in school-based programme. For the former, the apprenticeship is provided by employers, while the practical training for the latter is offered in school. Both of them complete with a final examination. Students may continue their education in the two-year vocational-technical programme (colloquially known as 3+2 programme), which prepares them for vocational leaving exam if they want to pursue higher education.

The **leaving exam course** is a one-year programme, intended for vocational leaving exam graduates. After completing leaving exam course, they take the leaving examination, which makes the eligible for university education.

The **Vocational course** is a one-year programme provided to upper secondary school students who, for various reasons, do not want to continue their education. It concludes with a final examinations, qualifying the applicants for a selected occupation.

United Kingdom

Main articles: Education in the United Kingdom

In the United Kingdom secondary schools offer secondary education covering the later years of schooling. State secondary schools in England and Wales are classed as either (selective) grammar schools, (non-selective) comprehensive schools, city technology colleges or academies. Within Scotland, there are only two types of state-run schools, Roman Catholic or non-denominational. Most secondary schools in England and Wales are comprehensive schools. Grammar schools have been retained in some counties in England. Academies (previously known as city academies) are a new type of school introduced in 2000 by the New Labour government of Tony Blair. Independent secondary schools generally take pupils at 13.

The table below lists the equivalent secondary school year systems used in the United Kingdom:

Scotland	England, Wales	Northern Ireland	Equivalent Ages
Primary 7	Year 7 (First Form)	Year 8 (First Form)	11-12
First Year (Secondary 1)	Year 8 (Second Form)	Year 9 (Second Form)	12-13
Second Year (Secondary 2)	Year 9 (Third Form)	Year 10 (Third Form)	13-14
Third Year (Secondary 3)	Year 10 (Fourth Form)	Year 11 (Fourth Form)	14-15
Fourth Year (Secondary 4)	Year 11 (Fifth Form)	Year 12 (Fifth Form)	15-16
Fifth Year (Secondary 5)	Year 12 Lower Sixth AS First Year College	Year 13 [Post 16] Lower Sixth	16-17
Sixth Year (Secondary 6)	Year 13 Upper Sixth A2 Second Year College	Year 14 [Post 16] Upper Sixth	17-18

Private schools in England and Wales generally still refer to years 7-11 as 1st-5th Form, or alternatively privates schools refer to Year 7 as IIIrds (Thirds), Y8 as LIV (Lower Four), Y9 as UIV (Upper Four), Y10 as LV (Lower Fifth), Y11 as UV (Upper Fifth) and then Sixth-Form.

England, Wales and Northern Ireland

Education in England, Wales, Northern Ireland

In England, Wales and Northern Ireland, students usually transfer from primary school straight to secondary school at age 11. In a few parts of the UK there are middle schools for ages 9 to 13 (similar to American middle schools), and upper schools for ages 13–18. A handful of 8-12 middle schools, an 12-16 or 18 secondary schools still exist. These schools were first introduced in September 1968, and the number rose dramatically during the 1970s, but the number of such schools has declined since the mid 1980s.

It is uncommon, but sometimes secondary schools (particularly in South West Wales) can also be split into 'Upper' (ages 13–16) and 'Lower' secondary schools (ages 11–13).

Education is compulsory up until the end of year 11 (the last Friday in June in the academic year a person turns 16), and schooling can continue for a further two years after that. Traditionally the five years of compulsory secondary schooling from ages 11 to 16 were known as "first year" through to "fifth year," (and still are in the private sector) but from September 1990 these years were renumbered Year 7 through to Year 11 (Year 8 to Year 12 in Northern Ireland) with the coming of the National Curriculum.

After Year 11 a student can opt to remain at school, transfer to a college, or to leave education and seek work or to start an apprenticeship. Those who stay at school enter Years 12 and 13 (Years 13 and 14 in Northern Ireland). These years are traditionally known as the Sixth Form ("Lower Sixth" and "Upper Sixth"), and require students to specialise in three to five subjects for their A Levels. In ever-increasing numbers since the 1990s some students also undertake more vocational courses at college such as a BTEC or other such qualification.

This is an unusually specialised curriculum for this age group by international standards, and recently some moves have been made to increase the number of subjects studied. After attaining the relevant A Level qualifications the student can enter university.

Scotland

In Scotland, students transfer from primary to secondary education at either 11 or 12 years old. Pupils usually attend the same secondary school as their peers, as all secondaries have 'intake primaries'. Pupils either attend a Roman Catholic, or non-denominational school according to their or more commonly their parents' beliefs. Pupils in Scotland attend the same secondary school throughout their education; there are no sixth-form colleges in Scotland.

The first and second years of secondary school (abbreviated to S1 and S2) is a continuation of the 5-14 curriculum started in primary school. After which students choose which subjects they wish to study with certain compulsory subjects such as English and Mathematics for S3 and S4. These are called Standard Grades, but some schools use Intermediates which take two years to complete with an exam at the end of S4. After Standard Grades/Intermediates, some students leave to gain employment or attend further education colleges, however nowadays most students study for Highers, of which five are usually studied. These take a year to complete. After which some students decide to apply for university or stay on for 6th year, where other Highers are gained, or Advanced Highers are studied. Due to the nature of schooling in Scotland, undergraduate honours degree programmes are four years long as matriculation is normally at the completion of highers in S5 (age 16-17), which compares with three years for the rest of the UK. As well as instruction through the English language education Gaelic medium education is also available throughout Scotland.

United States

As part of education in the United States, secondary education comprises grades 6, 7, 8, and 9 through 12. This depends on the school district and how it is comprised. Grades 9 through 12 is the most common grade structure for high school.

Vietnam

High school in Vietnam is called *Trung hoc pho thong*, which mean "Popular Middle School", for children from grade ten to grade twelve (age of 16 to 18). In high school, students have 12 subjects to learn, and all the 12 subjects are compulsory. For each main subject (Literature, Mathematics, Chemistry, Physics, Biology, History, Geography and Foreign language), there are two levels of study: Basic and Advanced. Subjects in advanced level will receive more time and intensiveness than the basic ones do. Students are divided into five groups:

- Basic group: All subjects are in basic level.
- Group A: Mathematics, Physics and Chemistry are in advanced level.
- Group B: Mathematics, Chemistry and Biology are in advanced level.
- Group C: Literature, History and Geography are in advanced level.
- Group D: Mathematics, Literature and Foreign language are in advanced level.

Students will graduate from high school if they have passed Graduation Tests of 6 subjects. If not, they must wait for the next year's tests. Students must graduate from high school to attend a university or college.

Names for secondary education by country

- Argentina: *Secundaria* or *Polimodal*, *Escuela secundaria*
- Australia: *High school*, *Secondary college*
- Austria: *Gymnasium (Ober- & Unterstufe), Hauptschule, "Höhere Bundeslehranstalt (HBLA), Höhere Technische Lehranstalt (HTL)*
- Azərbaycan: *Orta Məktəb*
- Bahamas, The: Junior High (grades 7-9), Senior High (grades 10-12)
- Belgium: *middelbare school*, *secundair onderwijs* or *humaniora*
- Bolivia: Educación Primaria Superior (grades 6-8) and Educación Secundaria, (grades 9-12)
- Bosnia and Herzegovina: *srednja škola* (literally *middle school*), *gimnazija* (gymnasium)
- Brazil: *Ensino Médio* (officially), *Colegial* (informally), *Segundo Grau* (formerly);
- Bulgaria: *Гимназия* (gymnasium), *Лицей* (Lyceum)
- Chile: *Enseñanza Media*.
- Colombia: *Bachillerato*, *Segunda Enseñanza*(literally *Second Learning*)
- People's Republic of China (China): *zhong xue* (中学; literally, *middle school*), consisting of *chu zhong* (初中; literally *beginning middle*) from grades 7 to 9 and *gao zhong* (高中; literally *high middle*) from grades 10 to 12
- Republic of China (Taiwan): Junior High School(國民中學), Senior High School(高級中學), Vocational High School(高級職業中學), Military School(軍校), and Complete High School(完全中學).
- Canada: *high school*, *secondary school*, *école secondaire*, *lycée*, *collegiate institute*
- Croatia: *srednja škola* (literally *middle school*), *gimnazija* (gymnasium)
- Cyprus: *Γυμνάσιο*(gymnasium), *Ενιαίο Λύκειο* (Lyceum)
- Czech Republic: *střední škola* (literally *middle school*), *gymnázium* (gymnasium), *střední odborné učiliště*
- Denmark: *gymnasium*
- Estonia: *Gymnasium*, *Lyceum*
- Finland: *lukio* (Finn.) *gymnasium* (Swed.)
- France: *collège* (junior), *lycée* (senior)
- Germany: *Gymnasium*, *Gesamtschule*, *Realschule*, *Hauptschule*, *Fachoberschule*

- Greece: *Γυμνάσιο (3 years)*(gymnasium), *Γενικό Λύκειο* (3 years) (~1996,2006~present), *Ενιαίο Λύκειο (3 years), (1997~2006)* (Lyceum)
- Hungary: *gimnázium* (grammar school), *középiskola* (comprehensive school, lit. "middle-school"), *szakközépiskola* (vocational secondary school, lit. "specified middle-school")
- Iceland: *Menntaskóli*, Framhaldskóli.
- India: *secondary school*
- Indonesia: *Sekolah Menengah Atas* (*SMA*) (lit. "Upper Middle School"), *Sekolah Menengah Pertama* (*SMP*) (lit. "First Middle School"), *Sekolah Menengah Kejuruan* (*SMK*) (vocational school, lit. "Middle Vocational School"),
- Italy: scuola secondaria di primo grado (3 years) + scuola secondaria di secondo grado (5 years): Liceo and Istituto Tecnico.
- Japan: *chūgakkō* (中学校; literally *middle school*), *kōtōgakkō* (高等学校; literally *high school*), *chūtōkyōikugakkō* (中等教育学校; Secondary School) - In the pre-Meiji educational system, the equivalent was called "chūsei"
- Liechtenstein: *gymnasium*
- Lithuania: *vidurinė mokykla* (literally *middle school*), *gimnazija* (gymnasium)
- Malaysia: *secondary school* or *sekolah menengah*, sometimes *high school* is used
- Malta: skola sekondarja or *secondary school*
- Mexico: *Educación secundaria y preparatoria*
- Netherlands: *middelbare school* or *voortgezet onderwijs*
- New Zealand: *high school*, *college* or *secondary school*
- Norway: *Videregående*
- Paraguay: *Educación Media*
- Peru: *Educación Secundaria* or *Escuela Secundaria*
- Poland: *gimnazjum* (grades 7-9), *liceum* (grades 10-12)
- Portugal: *2º Ciclo do Ensino Básico* (5th and 6th grades), *3º Ciclo do Ensino Básico* (7th to 9th grades), and *Ensino Secundário*, *Liceu* (10th to 12th grades)
- Romania: *gimnaziu* (grades 5-8), *liceu* (grades 9-12)
- Russia: *среднее образование* (transliteration: *sredneye obrazovaniye*)
- Serbia: *gymnasium* (4 years), professional schools (4 years), vocational schools (3 years)
- South Korea: *jung hakkyo* (중학교; literally *middle school*), and *godeung hakkyo* (고등학교; literally *high-rank school*)
- Spain: *Educación secundaria*, composed of two cycles: *E.S.O.* (*Educación Secundaria Obligatoria*, compulsory secondary education, 4 years, 7th to 10th grade) and *Bachillerato* (non-compulsory secondary education, 2 years, 11th and 12th grade); formerly, primary education comprised up to the 8th grade and the secondary education was composed of two non-compulsory cycles: *B.U.P.* (*Bachillerato Unificado Polivalente*, 3 years, 9th to 11th grade) and *C.O.U.* (*Curso de Orientación Universitaria*, 1 year, 12th grade)
- Sweden: *gymnasium*
- Switzerland: *gymnasium,* secondary school
- Turkiye: *Lise*
- United Kingdom: *Secondary School* (May be referred to as High School)
- Ukraine: *середня освіта* (transliteration: *serednya osvita*)
- United States: *high school* (usually grades 9–12 but sometimes 10–12, it is also called *senior high school*) is always considered secondary education; *junior high school* or *middle school* (6–8, 7–8, 6–9, 7–9, or other variations) are sometimes considered secondary education.
- Uruguay: Liceo (4 years of compulsory education - Ciclo Básico -, and 2 years of specialitation into humanitites, sciences or biology - Bachillerato diversificado-).

See also

- Education Index
- Educational stages
- Secondary school
- High school
- Boarding school
- Special school
- University-preparatory school
- Category:Secondary education by country for secondary education in individual countries
- List of schools by country
- List of colleges and universities by country
- List of the oldest schools in the world

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[6] Education for all by 2015, p. 284

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External links

- BBC Schools Website 11-16 (http://www.bbc.co.uk/schools/websites/11_16)
- Revision World Schools Website 11-16 (http://www.revisionworld.co.uk)
- World Bank Secondary Education (http://www.worldbank.org/education/secondary)
- Becoming a High-School teacher in Australia (http://www.acu.edu.au/international/study_options/secondary_school_teaching)

Course (education)

In U.S. and Canadian education, a **course** is a unit of teaching that typically lasts one academic term, is led by one or more instructors (teachers or professors), has a fixed roster of students, and gives each student a grade and academic credit.[1]

The original meaning—a course of instruction, the unit of instruction embodied by a course—is also used, so textbooks may be entitled, *e.g.*, *A Course in Modern Physics*.

In the United Kingdom and Australia, however, the term "course" refers to the entire programme of studies required to complete a university degree, and the word "unit" would be used to refer to an academic course in the North American sense. In between the two, in South Africa, it is common for the word 'course' officially to refer to the collection of all courses (in the American sense, which are often called 'modules') over a year or semester, though the American usage is common parlance.

Types of courses

Courses are made up of individual sessions, typically on a fixed weekly schedule.

There are different formats of course in universities:

- the lecture course, where the instructor gives lectures with minimal interaction;
- the seminar, where students prepare and present their original written work for discussion and critique;
- the colloquium or reading course, where the instructor assigns readings for each session which are then discussed by the members;
- the tutorial course, where one or a small number of students work on a topic and meet with the instructor weekly for discussion and guidance.
- the laboratory course, where most work takes place in a laboratory.

Many courses combine these formats. Lecture courses often include weekly discussion sections with smaller groups of students led by the principal instructor, another instructor, or teaching assistant. Laboratory courses often combine lectures, discussion sections, and laboratory sessions.

Students are expected to do various kinds of work for a course:

- Attending course sessions.
- Reading and studying course readings assigned in the course syllabus.
- Discussing material they have read.
- Writing short and long papers based on assigned reading and their own library research.
- Completing homework or problem sets.
- Completing laboratory exercises.
- Taking quizzes and examinations.

The exact work required depends on the discipline, the course, and the particular instructor. Unlike most European university courses, grades are generally determined by all of these kinds of work, not only the final examination.

Required and elective courses

Elective, used as an *adjective*, means that it is optional and chosen by election. An elective, a *noun*, chosen by a student means that it is an optional subject or course in a curriculum.

Elective is a term used for an academic course chosen by the student from a set of options, as opposed to a required course. While required courses (sometimes called core courses) are deemed essential for an academic degree, elective courses tend to be more specialized. Elective courses usually have fewer students than the required core courses.

The term **elective** is also used for a period of medical study conducted away from the student's home medical school, often abroad. Motivations for choosing such a program include a wish to experience other cultures, and to learn how to work in the clinical situations in other countries.[2]

Typically, North American universities require students to achieve both breadth of knowledge across disciplines and depth of knowledge in a particular chosen subject area, known as a major. Thus, students of the arts or humanities are required to take some science courses, and vice-versa. Normally, the students are free to choose their particular electives from among a wide range of courses offered by their university, as long as the students possess the prerequisite knowledge to understand the subject matter being taught. An English major, for example, might also study one or two years of chemistry, biology or physics as well as mathematics and a foreign language.

Elective courses are also offered in the third and fourth years of university, though the choice is more restrictive and will depend upon the particular major the student has chosen. For example, at the University of British Columbia, students intending to specialize in Sanskrit as part of a major in Asian language and culture will usually have to complete several Sanskrit and Hindi-Urdu or Punjabi courses during the first two years of university, as well as additional courses in Indic languages in the third and fourth years of study. In addition to these **core courses**, however, students would choose among several third- and fourth-year **elective courses** on topics not directly related to India, such as the history and culture of China, Japan or Indonesia.[3] elective is a adjective word pertaining to the principle of electing to an office, position, etc. chosen by election, as an official. bestowed by or right of election, as a body of persons. open to choice; optional; not required: an elective subject in college; elective surgery. chemistry . selecting for combination or action; tending to combine with certain substances in preference to others: elective attraction. noun an optional study; a course that a student may select from among alternatives.

See also

- Course credit
- Course Atlas (education)
- Course catalog (education)

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Lesson

A **lesson** is a structured period of time where learning is intended to occur. It involves one or more students (also called pupils or learners in some circumstances) being taught by a teacher or instructor. A lesson may be either one section of a textbook (which, apart from the printed page, can also include multimedia) or, more frequently, a short period of time during which learners are taught about a particular subject or taught how to perform a particular activity. Lessons are generally taught in a classroom but may instead take place in a situated learning environment.

"The Difficult Lesson" by William-Adolphe Bouguereau.

In a wider sense, a lesson is an insight gained by a learner into previously unfamiliar subject-matter. Such a lesson can be either planned or accidental, enjoyable or painful. The colloquial phrase "to teach someone a lesson", means to punish or scold a person for a mistake they have made in order to ensure that they do not make the same mistake again.

Lessons can also be made entertaining. When the term *education* is combined with *entertainment*, the term *edutainment* is coined.

Types of lesson

The potential format and structure of a lesson is dependent upon factors such as culture, learning objectives and the style of the individual teacher. Perhaps the most universal lesson presentation is when one person speaks to one or more people in the same room or space. This maybe supplemented with gestures and tools. A lesson may range from a lecture, to a demonstration, to a discussion or a blend of some of these common presentation methods.

Falconry lesson

Some lessons may involve work by the student. Traditionally this might include reading and writing or creating something, perhaps when the instructor is not present. The student may work independently or collaborate with others.

More recent technologies have expanded the way a lesson can be delivered. For example: film strips, pre-recorded audio and video tapes, television programs and podcasts are some ways to deliver or add to a lesson. Distance education techniques such as video conferencing, or electronic learning in a virtual learning environment have allowed interactive lessons to be presented to students who may not be in the same physical location. These tools offer new synchronous, asynchronous and blended ways to deliver

lessons.

Lesson plan

Teachers and instructors usually have a lesson plan which dictates the structure of the teaching. A group of lessons may be linked together in a unit plan, scheme, or work. The detail of the plan may vary with some being a simple list of what is going to be taught in a lesson with others working including much more detail, such as a time plan and the learning aims and objectives. Student teachers and beginning teachers are usually advised to put a great amount of detail into the written plan. This ensures that the plan will be cohesive, that all the components of a successful lesson are taken care of, and that one has a checklist to ensure that practicalities are taken care of (e.g., resources, scheduling, and classroom management considerations). Furthermore, beginning teachers are often advised to script some sections for themselves, such as questions they might ask the students in order to get a discussion going at the beginning of the lesson. The expectation is that the teachers can and should depart from the script when appropriate; improvisation is definitely encouraged and the fact of having written it out in advance ensures that an adequate amount of thought has been put into it ahead of time. Another reason for including a great amount of detail is that student teachers are often required to submit lesson plans in advance to their mentor teachers or professors in order to receive feedback on their ideas. When creating the lesson plan it is usual to look at the following:

- The aims (the broader goals of the lesson, what it is reaching towards)
- The objectives (the specific, measurable outcomes of the lesson – the particular skills or knowledge students should have acquired by its conclusion)
- The number of attendees and the student-teacher ratio
- The previous knowledge of the learners (which may or may not be the same for all) and how this will be activated at the start of the lesson
- The motivation of the learners (school students, for example, have no choice but to attend so the teacher must build some kind of motivation into the lesson)
- The time required for each section of teaching and learning
- The resources required and available
- Catering for the different needs (cultural differences, learning styles, special needs) of the individuals
- How the lesson is to be evaluated

Etymology

The word *lesson* comes from Latin *lectio* "the action of reading (out)". From there, the word was also used for the text itself, very often a passage from the Bible read out during a religious service ("first lesson", "second lesson"). Finally, any portion of a book to be studied was referred to as a *lesson*.

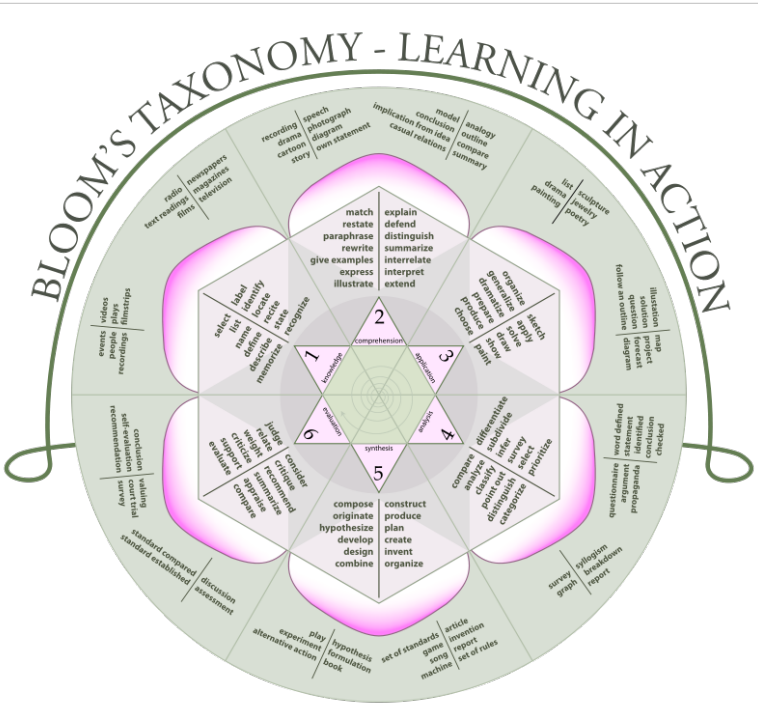
See also

- Frontal instruction
- Learning by teaching (LdL)
- Music lesson
- Cognitive Acceleration

Bloom's Taxonomy

Bloom's Taxonomy is a classification of learning objectives within education.

It refers to a classification of the different objectives that educators set for students (learning objectives). The taxonomy was first presented in 1956 through the publication *The Taxonomy of Educational Objectives, The Classification of Educational Goals, Handbook I: Cognitive Domain*, by Benjamin Bloom (editor), M. D. Englehart, E. J. Furst, W. H. Hill, and David Krathwohl. It is considered to be a foundational and essential element within the education community as evidenced in the 1981 survey *Significant writings that have influenced the curriculum: 1906-1981*, by H. G. Shane and the 1994 yearbook of the National Society for the Study of Education.



The Bloom's Wheel, according to the Bloom's verbs and matching assessment types. The verbs are intended to be feasible and measurable.

A great mythology has grown around the taxonomy, possibly due to many people learning about the taxonomy through second hand information. Bloom himself considered the Handbook, "one of the most widely cited yet least read books in American education".[1]

Domains

Key to understanding the taxonomy and its revisions, variations, and addenda over the years is an understanding that the original Handbook was intended only to focus on one of the three domains (as indicated in the domain specification in title), but there was expectation that additional material would be generated for the other domains (as indicated in the numbering of the handbook in the title). Bloom also considered the initial effort to be a starting point, as evidenced in a memorandum from 1971 in which he said, "Ideally each major field should have its own taxonomy in its own language - more detailed, closer to the special language and thinking of its experts, reflecting its own appropriate sub-divisions and levels of education, with possible new categories, combinations of categories and omitting categories as appropriate."[2]

Bloom's Taxonomy divides educational objectives into three "domains": Affective, Psychomotor, and Cognitive. Within the domains, learning at the higher levels is dependent on having attained prerequisite knowledge and skills at lower levels (Orlich, et al. 2004). A goal of Bloom's Taxonomy is to motivate educators to focus on all three domains, creating a more holistic form of education.

Affective

Skills in the **affective domain** describe the way people react emotionally and their ability to feel another living thing's pain or joy. Affective objectives typically target the awareness and growth in attitudes, emotion, and feelings.

There are five levels in the affective domain moving through the lowest order processes to the highest:

Receiving

The lowest level; the student passively pays attention. Without this level no learning can occur.

Responding

The student actively participates in the learning process, not only attends to a stimulus; the student also reacts in some way.

Valuing

The student attaches a value to an object, phenomenon, or piece of information.

Organizing

The student can put together different values, information, and ideas and accommodate them within his/her own schema; comparing, relating and elaborating on what has been learned.

Characterizing

The student holds a particular value or belief that now exerts influence on his/her behaviour so that it becomes a characteristic.

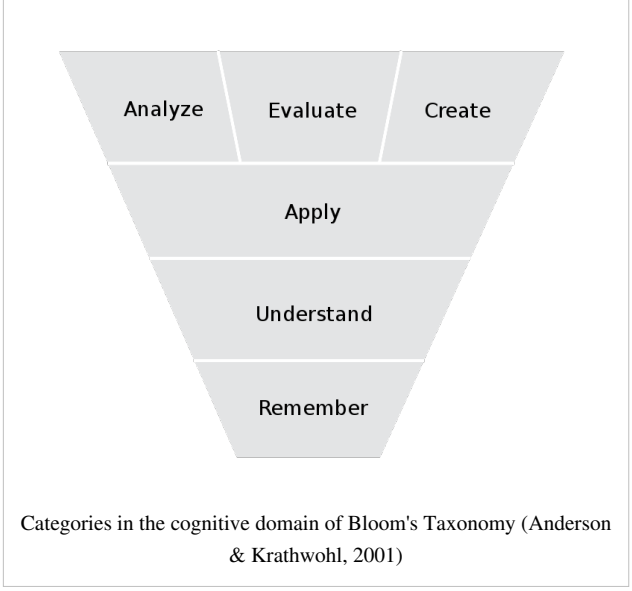
Psychomotor

Skills in the **psychomotor domain** describe the ability to physically manipulate a tool or instrument like a hand or a hammer. Psychomotor objectives usually focus on change and/or development in behavior and/or skills.

Bloom and his colleagues never created subcategories for skills in the psychomotor domain, but since then other educators have created their own psychomotor taxonomies.[3]

Cognitive

Skills in the **cognitive domain** revolve around knowledge, comprehension, and critical thinking of a particular topic. Traditional education tends to emphasize the skills in this domain, particularly the lower-order objectives.



Categories in the cognitive domain of Bloom's Taxonomy (Anderson & Krathwohl, 2001)

There are six levels in the taxonomy, moving through the lowest order processes to the highest:

KnowledgeKnowledge of specifics - terminology, specific facts Knowledge of ways and means of dealing with specifics - conventions, trends and sequences, classifications and categories, criteria, methodology Knowledge of the universals and abstractions in a field - principles and generalizations, theories and structures

Exhibit memory of previously-learned materials by recalling facts, terms, basic concepts and answers

Questions like: What are the health benefits of eating apples?

ComprehensionTranslation Interpretation Extrapolation

Demonstrative understanding of facts and ideas by organizing, comparing, translating, interpreting, giving descriptions, and stating main ideas

Questions like: Compare the health benefits of eating apples vs. oranges.

Application

Using new knowledge. Solve problems to new situations by applying acquired knowledge, facts, techniques and rules in a different way

Questions like: Which kinds of apples are best for baking a pie, and why?

AnalysisAnalysis of elements Analysis of relationships Analysis of organizational principles

Examine and break information into parts by identifying motives or causes. Make inferences and find evidence to support generalizations

Questions like: List four ways of serving foods made with apples and explain which ones have the highest health benefits. Provide references to support your statements.

SynthesisProduction of a unique communication Production of a plan, or proposed set of operations Derivation of a set of abstract relations

Compile information together in a different way by combining elements in a new pattern or proposing alternative solutions

Questions like: Convert an "unhealthy" recipe for apple pie to a "healthy" recipe by replacing your choice of ingredients. Explain the health benefits of using the ingredients you chose vs. the original ones.

EvaluationJudgments in terms of internal evidence Judgments in terms of external criteria

Present and defend opinions by making judgments about information, validity of ideas or quality of work based on a set of criteria

Questions like: Do you feel that serving apple pie for an after school snack for children is healthy? Why or why not?

Some critiques of Bloom's Taxonomy's (cognitive domain) admit the existence of these six categories, but question the existence of a sequential, hierarchical link.[4] Also the revised edition of Bloom's taxonomy has moved Synthesis in higher order than Evaluation. Some consider the three lowest levels as hierarchically ordered, but the three higher levels as parallel.[5] Others say that it is sometimes better to move to Application before introducing concepts. This thinking would seem to relate to the method of problem-based learning.

See also

- Educational psychology
- Educational technology
- Higher order thinking skills
- Mastery learning
- Physical education
- David Krathwohl
- Fluid and crystallized intelligence
- Information Hierarchy (DIKW)

Notes

[1] Anderson, L. W. * Sosniak, L. A. (1994) *Bloom's Taxonomy: A forty-year retrospective.*

[2] Krathwohl, D. R, Anderson, L. W. (2001) A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives

[3] Learning Domains or Bloom's Taxonomy - Donald R. Clark (http://www.nwlink.com/~donclark/hrd/bloom.html)

[4] Paul, R. (1993). Critical thinking: What every person needs to survive in a rapidly changing world (3rd ed.). Rohnert Park, California: Sonoma State University Press.

[5] Krathwohl, D. R, Anderson, L. W. (2001) A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives

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Lesson plan

A **lesson plan** is a teacher's detailed description of the course of instruction for an individual lesson. A daily lesson plan is developed by a teacher to guide class instruction. The detail of the plan will vary depending on the preference of the teacher, subject being covered, and the need and/or curiosity of children. There may be requirements mandated by the school system regarding the plan.

Developing a lesson plan

While there are many formats for a lesson plan, most lesson plans contain some or all of these elements, typically in this order:

- *Title* of the lesson
- *Time* required to complete the lesson
- List of required *materials*
- List of *objectives*, which may be *behavioral objectives* (what the student can *do* at lesson completion) or *knowledge objectives* (what the student *know*s at lesson completion)
- The *set* (or lead-in, or bridge-in) that focuses students on the lesson's skills or concepts—these include showing pictures or models, asking leading questions, or reviewing previous lessons
- An *instructional component* that describes the sequence of events that make up the lesson, including the teacher's instructional input and guided practice the students use to try new skills or work with new ideas
- *Independent practice* that allows students to extend skills or knowledge on their own
- A *summary*, where the teacher wraps up the discussion and answers questions
- An *evaluation* component, a test for mastery of the instructed skills or concepts—such as a set of questions to answer or a set of instructions to follow
- *Analysis* component the teacher uses to reflect on the lesson itself —such as what worked, what needs improving
- A *continuity* component reviews and reflects on content from the previous lesson[1]

A well developed lesson plan

A well developed lesson plan reflects interests and needs of students. It incorporates best practices for the educational field. The lesson plan correlates with the teacher's philosophy of education, which is what the teacher feels is the purpose of educating the students.[2]

Secondary English program lesson plans, for example, usually center around four topics. They are literary theme, elements of language and composition, literary history, and literary genre. A broad, thematic lesson plan is preferable, because it allows a teacher to create various research, writing, speaking, and reading assignments. It helps an instructor teach different literature genres and incorporate videotapes, films, and television programs. Also, it facilitates teaching literature and English together.[2] School requirements and a teacher's personal tastes, in that order, determine the exact requirements for a lesson plan.

Unit plans follow much the same format as a lesson plan, but cover an entire unit of work, which may span several days or weeks. Modern constructivist teaching styles may not require individual lesson plans. The unit plan may include specific objectives and timelines, but lesson plans can be more fluid as they adapt to student needs and learning styles.

Setting an objective

The first thing a teacher must do is decide on the lesson plan's focus. The teacher creates one idea or question they want the students to explore or answer. Next, the teacher creates classroom activities that correlate with the established idea or question. This includes individual and group activities. Having established these activities, the teacher identifies what language arts skills the lesson plan must cover. After the teacher completes these activities, they must ensure the lesson plan adheres to the best practices used in language arts. This includes conducting research on what teaching methods result in a high success rate for students. The teacher must ensure the lesson plan goals are compatible with the developmental level of the students. The teacher must also ensure their student achievement expectations are reasonable.[2]

Selecting lesson plan material

A lesson plan must correlate with the text book the class uses. The school usually selects the text books or provides teachers with a limited text book choice for a particular unit. The teacher must take great care and select the most appropriate book for the students.[2]

Types of Assignments

The instructor must decide whether class assignments are whole-class, small groups, workshops, independent work, peer learning, or contractual:

- Whole-class—the teacher lectures to the class as a whole and has the class collectively participate in classroom discussions.
- Small groups—students work on assignments in groups of three or four.
- Workshops—students perform various tasks simultaneously. Workshop activities must be tailored to the lesson plan.
- Independent work—students complete assignments individually.
- Peer learning—students work together, face to face, so they can learn from one another.
- Contractual work—teacher and student establish an agreement that the student must perform a certain amount of work by a deadline.[2]

These assignment categories (e.g. peer learning, independent, small groups) can also be used to guide the instructor's choice of assessment measures that can provide information about student and class comprehension of the material. As discussed by Biggs (1999), there are additional questions an instructor can consider when choosing which type of

assignment would provide the most benefit to students. These include:

- What level of learning do the students need to attain before choosing assignments with varying difficulty levels?
- What is the amount of time the instructor wants the students to use to complete the assignment?
- How much time and effort does the instructor have to provide student grading and feedback?
- What is the purpose of the assignment? (e.g. to track student learning; to provide students with time to practice concepts; to practice incidental skills such as group process or independent research)
- How does the assignment fit with the rest of the lesson plan? Does the assignment test content knowledge or does it require application in a new context?[3]

Further reading

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See also

- Bloom's Taxonomy
- Feminist literary criticism
- Lesson
- NCLB
- HotChalk

Notes and references

[1] " Writing Lesson Plans (http://www.huntington.edu/education/lessonplanning/Plans.html)." Huntington University: a Christian college ranked among America's best colleges. 15 Mar. 2009.

[2] Mitchell, Diana, and Stephen Tchudi, *Exploring and Teaching the English Language Arts* (4th Ed.). Boston, MA: Allyn & Bacon, 1999.

[3] Biggs, J. (1999) Teaching for Quality Learning at University (pp. 165-203). Buckingham, UK: SRHE and Open University Press.

Knowledge

Knowledge is defined by the Oxford English Dictionary as (i) expertise, and skills acquired by a person through experience or education; the theoretical or practical understanding of a subject; (ii) what is known in a particular field or in total; facts and information; or (iii) awareness or familiarity gained by experience of a fact or situation. Philosophical debates in general start with Plato's formulation of knowledge as "justified true belief." There is however no single agreed definition of knowledge presently, nor any prospect of one, and there remain numerous competing theories. Knowledge acquisition involves complex cognitive processes: perception, learning, communication, association and reasoning. The term *knowledge* is also used to mean the confident understanding of a subject with the ability to use it for a specific purpose if appropriate. See knowledge management for additional details on that discipline.

Personification of knowledge (Greek *Επιστημη*, Episteme) in Celsus Library in Ephesus, Turkey.

Defining knowledge (philosophy)


Robert Reid, *Knowledge* (1896). Thomas Jefferson Building, Washington, D.C.

> We suppose ourselves to possess unqualified scientific knowledge of a thing, as opposed to knowing it in the accidental way in which the sophist knows, when we think that we know the cause on which the fact depends, as the cause of that fact and of no other, and, further, that the fact could not be other than it is. Now that scientific knowing is something of this sort is evident — witness both those who falsely claim it and those who actually possess it, since the former merely imagine themselves to be, while the latter are also actually, in the condition described. Consequently the proper object of unqualified scientific knowledge is something which cannot be other than it is.
>
> — Aristotle, Posterior Analytics (Book 1 Part 2)

The definition of knowledge is a matter of on-going debate among philosophers in the field of epistemology. The classical definition, described but not ultimately endorsed by Plato [1] , specifies that a statement must meet three criteria in order to be considered knowledge: it must be justified, true, and believed. Some claim that these conditions are not sufficient, as Gettier case examples allegedly demonstrate. There are a number of alternatives proposed, including Robert Nozick's arguments for a requirement that knowledge 'tracks the truth' and Simon Blackburn's additional requirement that we do not want to say that those who meet any of these conditions 'through a

defect, flaw, or failure' have knowledge. Richard Kirkham suggests that our definition of knowledge requires that the belief is self-evident to the believer.[2]

In contrast to this approach, Wittgenstein observed, following Moore's paradox, that one can say "He believes it, but it isn't so", but not "He knows it, but it isn't so". [3] He goes on to argue that these do not correspond to distinct mental states, but rather to distinct ways of talking about conviction. What is different here is not the mental state of the speaker, but the activity in which they are engaged. For example, on this account, to *know* that the kettle is boiling is not to be in a particular state of mind, but to perform a particular task with the statement that the kettle is boiling. Wittgenstein sought to bypass the difficulty of definition by looking to the way "knowledge" is used in natural languages. He saw knowledge as a case of a family resemblance. Following this idea, "knowledge" has been reconstructed as a cluster concept that points out relevant features but that is not adequately captured by any definition.[4]

Communicating knowledge

Symbolic representations can be used to indicate meaning and can be thought of as a dynamic process. Hence the transfer of the symbolic representation can be viewed as one ascription process whereby knowledge can be transferred. Other forms of communication include imitation, narrative exchange along with a range of other methods. There is no complete theory of knowledge transfer or communication.

While many would agree that one of the most universal and significant tools for the transfer of knowledge is writing (of many kinds), argument over the usefulness of the written word exists however, with some scholars skeptical of its impact on societies. In his collection of essays *Technopoly* Neil Postman demonstrates the argument against the use of writing through an excerpt from Plato's work *Phaedrus* (Postman, Neil (1992) *Technopoly*, Vintage, New York, pp 73). In this excerpt the scholar Socrates recounts the story of Thamus, the Egyptian king and Theuth the inventor of the written word. In this story, Theuth presents his new invention "writing" to King Thamus, telling Thamus that his new invention "will improve both the wisdom and memory of the Egyptians" (Postman, Neil (1992) Technopoly, Vintage, New York, pp 74). King Thamus is skeptical of this new invention and rejects it as a tool of recollection rather than retained knowledge. He argues that the written word will infect the Egyptian people with fake knowledge as they will be able to attain facts and stories from an external source and will no longer be forced to mentally retain large quantities of knowledge themselves (Postman, Neil (1992) *Technopoly*, Vintage, New York ,pp 74).

Andrew Robinson also highlights, in his work *The Origins of Writing*, the possibility for writing to be used to spread false information and therefore the ability of the written word to decrease social knowledge (Robinson, Andrew (2003) *The Origins of Writing* in Crowley and Heyer (eds) Communication in History: Technology, Culture, Society, Boston pp 34). People are often internalizing new information which they perceive to be knowledge but in reality fill their minds with false knowledge.

Situated knowledge

Situated knowledge is knowledge specific to a particular situation. (Haraway, Donna (1998) Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective.

Some methods of generating knowledge, such as trial and error, or learning from experience, tend to create highly situational knowledge. One of the main benefits of the scientific method is that the theories it generates are much less situational than knowledge gained by other methods. Situational knowledge is often embedded in language, culture, or traditions.

Knowledge generated through experience is called knowledge "a posteriori", meaning afterwards. The pure existence of a term like "a posteriori" means this also has a counterpart. In this case that is knowledge "a priori", meaning before. The knowledge prior to any experience means that there are certain "assumptions" that one takes for granted.

For example if you are being told about a chair it is clear to you that the chair is in space, that it is 3D. This knowledge is not knowledge that one can "forget", even someone suffering from amnesia experiences the world in 3D. See also: *a priori and a posteriori*.

Partial knowledge

One discipline of epistemology focuses on partial knowledge. In most realistic cases, it is not possible to have an exhaustive understanding of an information domain, so then we have to live with the fact that our knowledge is always *not complete*, that is, partial. Most real problems have to be solved by taking advantage of a partial understanding of the problem context and problem data. That is very different from the typical simple maths problems one might solve at school, where all data is given and one has a perfect understanding of formulas necessary to solve them.

This idea is also present in the concept of bounded rationality which assumes that in real life situations people often have a limited amount of information and make decisions accordingly.

Scientific knowledge

The development of the scientific method has made a significant contribution to our understanding of knowledge. To be termed scientific, a method of inquiry must be based on gathering observable, empirical and measurable evidence subject to specific principles of reasoning.[5] The scientific method consists of the collection of data through observation and experimentation, and the formulation and testing of hypotheses.[6] . Science, and the nature of scientific knowledge have also become the subject of Philosophy. As science itself has developed, knowledge has developed a broader usage which has been developing within biology/psychology—discussed elsewhere as meta-epistemology, or genetic epistemology, and to some extent related to "theory of cognitive development".

Note that "epistemology" is the study of knowledge and how it is acquired. Science is “the process used everyday to logically complete thoughts through inference of facts determined by calculated experiments." Sir Francis Bacon, critical in the historical development of the scientific method, his works established and popularized an inductive methodology for scientific inquiry. His famous aphorism, "knowledge is power", is found in the Meditations Sacrae (1597).[7] .

Sir Francis Bacon, "Knowledge is Power"

Until recent times, at least in the Western tradition, it was simply taken for granted that knowledge was something possessed only by humans — and probably *adult* humans at that. Sometimes the notion might stretch to (ii) *Society-as-such*, as in (e.g.) "the knowledge possessed by the Coptic culture" (as opposed to its individual members), but that was not assured either. Nor was it usual to consider *unconscious* knowledge in any systematic way until this approach was popularized by Freud. [8]

Other biological domains where "knowledge" might be said to reside, include: (iii) the *immune system*, and (iv) in the *DNA of the genetic code*. See the list of four "epistemological domains": Popper, (1975)[9] ; and Traill (2008 [10]: Table S, page 31)—also references by both to Niels Jerne.

Such considerations seem to call for a separate definition of "knowledge" to cover the biological systems. For biologists, knowledge must be usefully *available* to the system, though that system need not be conscious. Thus the criteria seem to be:

- The system should apparently be dynamic and self-organizing (unlike a mere book *on its own*).

- The knowledge must constitute some sort of representation of "the outside world"[11] , or ways of dealing with it (directly or indirectly).
- There must be some way for the system to access this information quickly enough for it to be useful.

Scientific knowledge may not involve a claim to certainty, maintaining skepticism means that a scientist will never be absolutely certain when they are correct and when they are not. It is thus an irony of proper scientific method that one must doubt even when correct, in the hopes that this practice will lead to greater convergence on the truth in general.[12]

Religious meaning of knowledge

In many expressions of Christianity, such as Catholicism and Anglicanism, knowledge is one of the seven gifts of the Holy Spirit.[13]

In Islam, knowledge (Arabic: علم, *ʿilm*) is given great significance. "The All-Knowing" (*al-ʿAlīm*) is one of the 99 names reflecting distinct attributes of God. The Qur'an asserts that knowledge comes from God (2:239) and various *hadith* encourage the acquisition of knowledge. Muhammad is reported to have said "Seek knowledge from the cradle to the grave" and "Verily the men of knowledge are the inheritors of the prophets". Islamic scholars, theologians and jurists are often given the title *alim*, meaning "knowledgable".

Hindu Scriptures present two kinds of knowledge, *Paroksha Gnyana* and *Aporoksha Gnyana*. *Paroksha Gnyana* (also spelled *Paroksha-Jnana*) is secondhand knowledge: knowledge obtained from books, hearsay, etc. *Aporoksha Gnyana* (also spelled *Aparoksha-Jnana*) is the knowledge borne of direct experience, i.e., knowledge that one discovers for oneself.[14]

The Old Testament's tree of the knowledge of good and evil contained the knowledge that separated Man from God: "And the LORD God said, Behold, the man is become as one of us, to know good and evil…" (Genesis 3:22)

In Gnosticism divine knowledge or gnosis is hoped to be attained and escape from the demiurge's physical world. And in Thelema knowledge and conversation with one's Holy Guardian Angel is the purpose of life, which is similar to Gnosis or enlightenment in other mystery religions.

See also

- Analytic-synthetic distinction
- Descriptive knowledge
- Epistemic logic
- Epistemology (theory of knowledge)
- Explicit knowledge
- Figurative system of human knowledge
- Intelligence
- Intuition as an unconscious form of knowledge.
- Knowledge discovery
- Knowledge engineering
- Knowledge management
- Knowledge relativity
- Knowledge communication
- Knowledge retrieval
- Learning
- Metaknowledge
- Philosophical skepticism
- Procedural knowledge
- Propædia (outline of human knowledge)
- Society for the Diffusion of Useful Knowledge
- Scientia potentia est/ (knowledge is power)
- Tacit knowledge
- Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities
- Wisdom
- Hard knowledge and Soft knowledge

Notes

[1] In Plato's *Theaetetus*, Socrates and Theaetetus discuss three definitions of *knowledge*: knowledge as nothing but perception, knowledge as true judgment, and, finally, knowledge as a true judgment with an account. Each of these definitions is shown to be unsatisfactory.

[2] http://www.centenary.edu/attachments/philosophy/aizawa/courses/epistemologyf2008/kirkham1984.pdf

[3] Ludwig Wittgenstein, *On Certainty*, remark 42

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Skill

A **skill** is the learned capacity to carry out pre-determined results often with the minimum outlay of time, energy, or both. Skills can often be divided into domain-general and domain-specific skills. For example, in the domain of work, some general skills would include time management, teamwork and leadership, self motivation and others, whereas domain-specific skills would be useful only for a certain job. Skill usually requires certain environmental stimuli and situations to assess the level of skill being shown and used.

People need a broad range of skills in order to contribute to a modern economy and take their place in the technological society of the twenty-first century. An ASTD study showed that through technology, the workplace is changing, and so are the skills that employees must have to be able to change with it. The study identified 16 basic skills (Carnevale, 1990) that the workplace of the future would need in the employee of the future.

General skills

Learning to learn

Learning is an integral part of everyday life. The skill of knowing how to learn is a must for everybody and is the key to acquiring new skills and sharpening the ability to think through problems face challenges. It opens the door to other learning. Study smarter - not harder. A secondary benefit of learning how to learn is that it empowers the learner's ability to develop a measurable task repeatedly.

Foundation skills

From the employer's perspective, the skill of knowing how to learn is cost-effective because it can mitigate the cost of retraining efforts. When workers use efficient learning strategies, they absorb and apply training more quickly, saving their employers money and time. When properly prepared, employees can use learning-to-learn techniques to distinguish between essential and nonessential information, discern patterns in information, and pinpoint the actions necessary to improve job performance. Many employers - particularly those dealing with rapid technological change see the learning-to-learn skill as an urgent necessity. Productivity, innovation, and competitiveness all depend on developing the workers' learning capability. Machinery and processes are transferable between companies and countries, but it is the application of human knowledge to technology and systems that provides the competitive edge.

Basic skills competence

The inability of large numbers of new workers to meet reading, writing, or computational (simple mathematics) standards is an economic and competitive issue. This forces employers to spend more on these critical competence skills. The majority of workers are literate and numerate but frequently, cannot use these skills effectively because they are rusty when called upon to use mathematical principles they have not used for 20 years, because they must use the skills in a context different from the one in which they originally learned them, or because they do not understand how to expand or apply the skill.

Reading

Reading has historically been considered the fundamental vocational skill for a person to get, keep, get ahead, or to change jobs. One educational assessment by Kirsch and Jungeblut in 1986, indicates that there is a large nationwide population of intermediate literates who only have fourth to eighth grade literacy equivalency (but are high school graduates) and who have not obtained a functional or employable literacy level.

Writing

Writing is consistently ranked among the highest priorities for job applicants and employees. One study states that more than 50 percent of the business respondents identified writing skill deficiencies in secretarial, skilled, managerial, supervisory, and bookkeeping personnel.

Computation

Because of technology, simple mathematical computation is important as employers focus on an employee's ability to compute at higher levels of sophistication. The introduction of sophisticated management and quality control approaches demand higher mathematical skills. Ironically, as occupational skill-level requirements climb, higher educational dropout rates and worsening worker deficiencies in computational skills are appearing (Brock, 1987; Kirsch and Jungeblut, 1986; Semerad, 1987). Employers complain particularly about miscalculations of decimals and fractions, resulting in expensive production errors. Employees must calculate correctly to conduct inventories, complete accurate reports of production levels, measure machine parts or specifications so that medium-to-high levels of mathematics skills are required across job categories. The business effect of math skill deficiencies is bottom line losses.

Communication skills

Formal education in communication has been directed at reading and writing skills that are used least in the workplace. Most have only one or two years in speech related courses and no formal training in listening. Workers who can express their ideas orally and who understands verbal instructions make fewer mistakes, adjust more easily to change, and more readily absorb new ideas than those who do not. Thus career development is enhanced by training in oral communication and listening because these skills contribute to an employee's success in all of the following areas: interviewing, making presentations at or conducting meetings; negotiating and resolving conflict; selling; leading; being assertive; teaching or coaching others; working in a team; giving supervisors feedback about conversations with customers; and retraining. Employees spend most of the day communicating, and the time they spend will increase as robots, computers, and other machines take over mundane, repetitive jobs.

Oral

Skill in oral communication is a key element of good customer service. More than 76 million workers (in the USA) are in the service sector and companies that provide excellent service tend to stay far ahead of their competitors. To provide good service, all employees (not just designated sales and marketing employees) must learn how to talk and listen to customers, handle complaints and solve their problems.

Listening

As workers go up the corporate ladder, the listening time increases so that top managers spend as much as 65 percent of their day listening (Keefe, 1971). Because most people have had no training in this critical skill, poor listening habits cost hundreds of millions of dollars each year in productivity lost through misunderstandings and mistakes. At the rate of one $15 mistake per U.S. employee per year, the annual cost of poor listening would be more than a billion dollars.

Problem-solving

Problem-solving skills include the ability to recognize and define problems, invent and implement solutions, and track and evaluate results. Creative thinking not only requires the ability to understand problem-solving techniques, but also to transcend logical and sequential thinking, making the leap to innovation. Unresolved problems create dysfunctional relationships in the workplace. Ultimately, they become impediments to flexibility and in dealing with strategic change in an open-ended and creative way.

Creative thinking

New approaches to problem-solving, organizational design, and product development all spring from the individual capacity for creative thinking. At work, creative thinking is generally expressed through the process of creative problem solving. Increasingly, companies are identifying creative problem solving as critical to their success and are instituting structured approaches to problem identification, analysis, and resolution. Creative solutions help the organization to move forward toward strategic goals. Organizational strategy is an example of creative thinking.

Self-esteem

Another key to effectiveness is good personal management. Self-esteem, motivation/goal setting, and employability/career development skills are critical because they impact individual morale which in turn plays a significant role in an institutions ability to achieve bottom line results. Employers have felt the pressure to make provisions to address perceived deficiencies in these skill areas because they realize that a work force without such skills is less productive. Conversely, solid personal management skills are often manifested by efficient integration of new technology or processes, creative thinking, high productivity, and a pursuit of skill enhancement. Unfortunately, problems related to these skill areas have increased primarily because entry-level applicants are arriving with deficiencies in personal management skills. On the job, the lack of personal management skills affects hiring and training costs, productivity, quality control, creativity, and ability to develop skills to meet changing needs. This presents a series of roadblocks that slow or halt an organizations progress. An organization with such difficulties cannot plan accurately for its future to integrate new technology, establish new work structures, or implement new work processes.

Motivation/goal setting

Motivation is the combination of desire, values, and beliefs that drives you to take action. These three motivating factors, and/or lack of them, are at the root of why people behave the way they do. Because you ultimately control your values, beliefs, and desires, you can influence your motivations. This means, if you consider something important and assign value to it, you are more likely to do the work it takes to attain the goal. When motivation originates from an internal source and is combined with a realistic goal and circumstance, the odds of a good outcome are greatly increased.

Employability/career development

One of the keys to success in today's world of work is career self-reliance — the ability to actively manage worklife in a rapidly changing environment and the attitude of being self-employed whether inside or outside an organization. Acquiring the skills and knowledge to become career self-reliant will enable employees to survive and even thrive in times of great change.

Group effectiveness

The move toward participative decision making and problem solving inevitably increases the potential for disagreement, particularly when the primary work unit is a peer team with no supervisor. This puts a premium on developing employees group effectiveness skills.

Interpersonal

Interpersonal skills training can help employees recognize and improve their ability to determine appropriate self-behaviour, cope with undesirable behaviour in others, absorb stress, deal with ambiguity, structure social interaction, share responsibility, and interact more easily with others. Teamwork skills are critical for improving individual task accomplishment because practical innovations and solutions are reached sooner through cooperative behaviour.

Negotiation and teamwork

Negotiation skills are critical for the effective functioning of teams as well as for individual acceptance in an organization. Change strategies are usually dependent upon the ability of employees to pull together and refocus on the new common goal. Carnevale wrote in a previous book that there are two ways to increase productivity. "The first is by increasing the intensity with which we utilize (human) resources (working harder), and the second is by increasing the efficiency with which we mix and use available resources (working smarter)."

Influence

The new competitive standards affect organizational structures, requiring a move away from top- down systems and toward more flexible networks and work teams. Technical changes result in new work processes and procedures. These require constant updating of employer-specific technical knowledge. In a world of rapid change, obsolescence is an interminable danger. As technology replaces more of the hands-on work, more employees will be dedicated to service functions where they will spend more time face-to-face with co-workers and clients. Organizational formats in the New Economy require more general skills. Interpersonal skills, communications skills and effective leadership skills are required by more and more non-supervisory employees. Managers in the New Economy relinquish control of work processes to work teams and will need to provide integration through leadership and monitoring.

Organizational

To be effective, employees need a sense of how the organization works and how the actions of each individual affect organizational and strategic objectives. Skill in determining the forces and factors that interfere with the organizations ability to accomplish its tasks can help the worker become a master problem solver, an innovator, and a team builder. Organizational effectiveness skills are the building blocks for leadership. A proactive approach toward increasing organizational effectiveness skills through training reflects the commitment to shared leadership concepts operating in the organization. Implementing shared leadership values has a positive impact on productivity. When leadership functions are dispersed, those who perform in leadership roles willingly take on the responsibility for creating and communicating the vision of the organization and what its work groups should accomplish. By their proximity, they are also better able to create and communicate the quality of the work environment necessary to realize that vision. One approach is the superteam which is defined as a high performing team which produces

outstanding achievements. Leaders of superteams spend as much time anticipating the future as they do managing the present by thinking forward to, and talking to others about their goal, for it is this that provides the team with its purpose and direction (Hastings, Bixby, and Chaudhry-Lawton, 1986). Deploying visionary leaders improves institutional response time to changing and increasingly complex external environment factors that affect the organization's ability to operate effectively.

Leadership

At its most elementary level, leadership means that one person influences another. An organization that supports the concepts of shared leadership encourages employees at all levels to assume this role where it is appropriate. The function of leadership include stating basic values, announcing goals, organizing resources, reducing tensions between individuals, creating coalitions, coalescing workers, and encouraging better performance. There is a direct correlation between the implementation of shared leadership practice and product improvement, higher morale, and innovative problem solving, which leads to a more hospitable environment for instituting change. Top management cannot make the system work without employees taking on shared leadership roles. A great many people must be in a state of psychological readiness to take leaderlike action to improve the functioning at their levels. Historically, the roots of business failure can often be traced to inadequate training in and attention to the importance of leadership as a basic workplace skill. Too frequently, companies designate leaders without providing proper evaluation and training to ensure that they are qualified to assume leadership roles.

Examples

- Academic skills
  - Reading
  - Logic
  - Critical thinking
- Interpersonal communication
  - Speech: listening, talking
  - Nonverbal communication
  - Literacy: writing, reading
- Motor skills
  - Walking, arts and crafts, craft, sport
- Skilled labor
- Innovation skill

Miscellaneous

- Charisma
- Perception
- Persuasion
- Procedural memory, knowledge, expertise, fluency
- Profession
- Theory of multiple intelligences
- Thinking and intelligence, IQ

See also

- Competence (disambiguation)
- Deskilling
- Dreyfus model of skill acquisition
- Dunning–Kruger effect, the tendency for incompetent people to grossly overestimate their skills
- Four stages of competence
- Game of skill
- Habit (psychology)
- Human development theory
- Incompetence
- Individual capital
- Learning
- Online skill-based game
- Soft skills
- Transferable skills analysis

References

External links

- Skills Development: Attitudes and Perceptions (http://www.skillsdevelopment.org/default.aspx?page=350) - City & Guilds Centre for Skills Development
- American Society for Training & Development (http://www.astd.org)
- Online Courses with Skill Orientation (http://www.schoox.com/skills/skills.php)
- Australian National Training Authority (http://www.dest.gov.au/sectors/training_skills)
- NCVER's Review of generic skills for the new economy (http://www.ncver.edu.au/research/proj/nr0024.pdf)
- SKILLS EU Research Integrated Project (http://www.skills-ip.eu/)

Attitude (psychology)

An **attitude** is a hypothetical construct that represents an individual's degree of like or dislike for an item. Attitudes are generally positive or negative views of a person, place, thing, or event—this is often referred to as the attitude object. People can also be conflicted or ambivalent toward an object, meaning that they simultaneously possess both positive and negative attitudes toward the item in question.

Attitudes are judgments. They develop on the **ABC** model (affect, behavior, and cognition){{van den Berg et al., 2006; Eagly & Chaiken, 1998}. The *affective* response is an emotional response that expresses an individual's degree of preference for an entity. The *behavioral* intention is a verbal indication or typical behavioral tendency of an individual. The *cognitive* response is a cognitive evaluation of the entity that constitutes an individual's beliefs about the object. Most attitudes are the result of either direct experience or observational learning from the environment.

Attitude formation

Unlike personality, attitudes are expected to change as a function of experience. Tesser (1993) has argued that hereditary variables may affect attitudes - but believes that they may do so indirectly. For example, consistency theories, which imply that we must be consistent in our beliefs and values. The most famous example of such a theory is Dissonance-reduction theory, associated with Leon Festinger, although there are others, such as the balance theory.

Attitude change

Attitudes can be changed through persuasion and we should understand attitude change as a response to communication. Experimental research into the factors that can affect the persuasiveness of a message include:

1. Target Characteristics: These are characteristics that refer to the person who receives and processes a message. One such trait is intelligence - it seems that more intelligent people are less easily persuaded by one-sided messages. Another variable that has been studied in this category is self-esteem. Although it is sometimes thought that those higher in self-esteem are less easily persuaded, there is some evidence that the relationship between self-esteem and persuasibility is actually curvilinear, with people of moderate self-esteem being more easily persuaded than both those of high and low self-esteem levels (Rhodes & Woods, 1992). The mind frame and mood of the target also plays a role in this process.
2. Source Characteristics: The major source characteristics are expertise, trustworthiness and interpersonal attraction or attractiveness. The credibility of a perceived message has been found to be a key variable here; if one reads a report about health and believes it came from a professional medical journal, one may be more easily persuaded than if one believes it is from a popular newspaper. Some psychologists have debated whether this is a long-lasting effect and Hovland and Weiss (1951) found the effect of telling people that a message came from a credible source disappeared after several weeks (the so-called "sleeper effect"). Whether there is a sleeper effect is controversial. Perceived wisdom is that if people are informed of the source of a message before hearing it, there is less likelihood of a sleeper effect than if they are told a message and then told its source.
3. Message Characteristics: The nature of the message plays a role in persuasion. Sometimes presenting both sides of a story is useful to help change attitudes.

Cognitive Routes: A message can appeal to an individual's cognitive evaluation to help change an attitude. In the *central route* to persuasion the individual is presented with the data and motivated to evaluate the data and arrive at an attitude changing conclusion. In the *peripheral route* to attitude change, the individual is encouraged to not look at the content but at the source. This is commonly seen in modern advertisements that feature celebrities. In some cases, physician, doctors or experts are used. In other cases film stars are used for their attractiveness.

Emotion and Attitude Change

Emotion is a common component in persuasion, social influence, and attitude change. Much of attitude research emphasized the importance of affective or emotion components. Emotion works hand-in-hand with the cognitive process, or the way we think, about an issue or situation. Emotional appeals are commonly found in advertising, health campaigns and political messages. Recent examples include no-smoking health campaigns and political campaign advertising emphasizing the fear of terrorism. Attitudes and attitude objects are functions of cognitive, affective and conative components. Attitudes are part of the brain's associative networks, the spider-like structures residing in long term memory that consist of affective and cognitive nodes.

By activating an affective or emotion node, attitude change may be possible, though affective and cognitive components tend to be intertwined. In primarily affective networks, it is more difficult to produce cognitive counterarguments in the resistance to persuasion and attitude change.

Affective forecasting, otherwise known as intuition or the prediction of emotion, also impacts attitude change. Research suggests that predicting emotions is an important component of decision making, in addition to the cognitive processes. How we feel about an outcome may override purely cognitive rationales.

In terms of research methodology, the challenge for researchers is measuring emotion and subsequent impacts on attitude. Since we cannot see into the brain, various models and measurement tools have been constructed to obtain emotion and attitude information. Measures may include the use of physiological cues like facial expressions, vocal changes, and other body rate measures. For instance, fear is associated with raised eyebrows, increased heart rate and increase body tension (Dillard, 1994). Other methods include concept or network mapping, and using primes or word cues.

Components of Emotion Appeals

Any discrete emotion can be used in a persuasive appeal; this may include jealousy, disgust, indignation, fear, blue, disturbed, haunted,and anger. Fear is one of the most studied emotional appeals in communication and social influence research.

Important consequences of fear appeals and other emotion appeals include the possibility of reactance which may lead to either message rejections or source rejection and the absence of attitude change. As the EPPM suggests, there is an optimal emotion level in motivating attitude change. If there is not enough motivation, an attitude will not change; if the emotional appeal is overdone, the motivation can be paralyzed thereby preventing attitude change.

Emotions perceived as negative or containing threat are often studied more than perceived positive emotions like humor. Though the inner-workings of humor are not agreed upon, humor appeals may work by creating incongruities in the mind. Recent research has looked at the impact of humor on the processing of political messages. While evidence is inconclusive, there appears to be potential for targeted attitude change is receivers with low political message involvement.

Important factors that influence the impact of emotion appeals include self efficacy, attitude accessibility, issue involvement, and message/source features. Self efficacy is a perception of one's own human agency; in other words, it is the perception of our own ability to deal with a situation. It is an important variable in emotion appeal messages because it dictates a person's ability to deal with both the emotion and the situation. For example, if a person is not self-efficacious about their ability to impact the global environment, they are not likely to change their attitude or behavior about global warming.

Dillard (1994) suggests that message features such as source non-verbal communication, message content, and receiver differences can impact the emotion impact of fear appeals. The characteristics of a message are important because one message can elicit different levels of emotion for different people. Thus, in terms of emotion appeals messages, one size does not fit all.

Attitude accessibility refers to the activation of an attitude from memory in other words, how readily available is an attitude about an object, issue, or situation. Issue involvement is the relevance and salience of an issue or situation to an individual. Issue involvement has been correlated with both attitude access and attitude strength. Past studies conclude accessible attitudes are more resistant to change

Implicit and explicit attitudes

There is also considerable research on implicit attitudes, which are generally unacknowledged or outside of awareness, but have effects that are measurable through sophisticated methods using people's response times to stimuli. Implicit and explicit attitudes seem to affect people's behavior, though in different ways. They tend not to be strongly associated with each other, although in some cases they are. The relationship between them is poorly understood.

Jung's definition

Attitude is one of Jung's 57 definitions in Chapter XI of *Psychological Types*. Jung's definition of attitude is a "readiness of the psyche to act or react in a certain way" (Jung, [1921] 1971:par. 687). Attitudes very often come in pairs, one conscious and the other unconscious. Within this broad definition Jung defines several attitudes.

The main (but not only) attitude dualities that Jung defines are the following.

- Consciousness and the unconscious. The "presence of two attitudes is extremely frequent, one conscious and the other unconscious. This means that consciousness has a constellation of contents different from that of the unconscious, a duality particularly evident in neurosis" (Jung, [1921] 1971: par. 687).
- Extraversion and introversion. This pair is so elementary to Jung's theory of types that he labeled them the "attitude-types".
- Rational and irrational attitudes. "I conceive reason as an attitude" (Jung, [1921] 1971: par. 785).
- The rational attitude subdivides into the thinking and feeling psychological functions, each with its attitude.
- The irrational attitude subdivides into the sensing and intuition psychological functions, each with its attitude. "There is thus a typical thinking, feeling, sensation, and intuitive attitude" (Jung, [1921] 1971: par. 691).
- Individual and social attitudes. Many of the latter are "isms".

In addition, Jung discusses the abstract attitude. “When I take an abstract attitude...” (Jung, [1921] 1971: par. 679). Abstraction is contrasted with concretism. “CONCRETISM. By this I mean a peculiarity of thinking and feeling which is the antithesis of abstraction” (Jung, [1921] 1971: par. 696). For example "i hate his attitude for being Sarcastic.

MBTI definition

The MBTI write-ups limit the use of "attitude" to the extraversion-introversion (EI) and judging-perceiving (JP) indexes.

> The JP index is sometimes referred to as an orientation to the outer world and sometimes JP is classified as an "attitude." In Jungian terminology the term *attitude* is restricted to EI. In MBTI terminology *attitude* can include EI and also JP. (Myers, 1985:293 note 7).

The above MBTI Manual statement, is restricted to EI," is directly contradicted by Jung's statement above that there is "a typical thinking, feeling, sensation, and intuitive attitude" and by his other uses of the term "attitude". Regardless of whether the MBTI simplification (or oversimplification) of Jung can be attributed to Myers, *Gifts Differing* refers only to the "EI preference", consistently avoiding the label "attitude". Regarding the JP index, in *Gifts Differing* Myers does use the terms "the *perceptive* attitude and the *judging* attitude" (Myers, 1980:8). The JP index corresponds to the irrational and rational attitudes Jung describes, except that the MBTI focuses on the preferred orientation in the outer world in order to identify the function hierarchy. To be consistent with Jung, it can

be noted that a rational extraverted preference is accompanied by an irrational introverted preference.

See also

- Cognitive dissonance
- Elaboration likelihood model
- Propositional attitude
- Social psychology
- Theory of reasoned action
- Theory of planned behaviour
- Expectancy-value theory

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