There has been increasing interest recently in the role of “experience” in the education of young people—“experience” in the sense of activities other than reading or class discussion carried on outside the classroom and often off-campus. Our school has been involved for nearly a decade in experiments incorporating experience of this kind into many aspects of the learning and growth of high school youngsters. The purpose of these experiences has ranged from assisting the development of cognitive capacities and learning, on the one hand, to furthering the growth of character and personal qualities, on the other. All this has been in pursuance of our Athenian ideal of full human development.

While intellectual and personal development are interrelated and in practice proceed together, for the purpose of this paper I want to put personal development aside and discuss solely the relation between experience and cognitive learning. I am thus saving for later discussion the relation between experience and the development of such things as aesthetic qualities, physical competence, concern for others, a sense of self and self-confidence, civic interest, exploration of career alternatives, etc. This paper deals only with the use of experience to further learning and intellectual development.

Learning is a natural way by which young (and old) strive to understand and cope with the world in which they live. Just as nature organized the stars, planets and other phenomena in accordance with regular laws, she also implanted the need to learn in all living organisms. Or, rather, the organisms which won out in the evolutionary process acquired, through survival of the fittest, that capacity to learn and adapt. Otherwise they would have become extinct, like the
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dinosaurs, whose capacity to learn and adapt worked well for a time, but ultimately was not adequate to changed environmental conditions.

every biological being interacts with its environment and makes changes in structure and function to adapt, survive, and flourish. humans are no exception. piaget tells us that a baby’s major task for the first year and half of life is coordinating sensory input and motor output, and, through the process of feedback, a basic nervous system map is created. thus, human learning from the outset involves body and mental actions, feedback from the environment, and resulting adaptations and changes—in a word, experiential learning. we mean by “evolution” the successful accomplishment of this by a plant or animal—or human.

in this way, babies learn to talk by cooing and gurgling, impelled by their nature to seek to relate to their parents. they do not require courses in talking or crawling, nor do they need grades for motivation. adults may channel some of the baby’s natural impulses into culturally accepted patterns (e.g. in toilet training, dress, manners, etc.), but the baby’s basic impulses to relate to and deal with the outside world are as much a genetic necessity as his need for nourishment or warmth. the youth of tribes living in a natural state have the same impulses and needs—to forage for good, to learn to hunt, to make weapons, etc. copying their elders. in all these instances, adults function as teachers, even though they may not think of themselves as such.

learning in action from adults is the basic kind of learning which flourished for hundreds of thousands of years and which enabled our predecessors to survive successfully. other pre-humans—australopithicenes, neanderthals, etc.—did not do as well and are no longer with us. in the sense of proven success for over 99% of human existence (roughly the 4 million years preceding the last 10,000), the way in which the human young of countless prehistoric
generations learned to cope with and master a hostile environment suggests a certain validity in the learning process involved.

Today’s young male and female are responding to the same natural impulses as the youth of prehistoric generations. They have the same need to understand and cope with the realities of the world in which they live. For each the impulse is as much a part of them as breathing and eating. The main difference is the social setting in which the learning takes place. If the learning process is less successful, or if the young turn away from it in boredom or alienation, it is not because of inherent impulse or capability. It is probably due as much as anything to the way in which society has changed the conditions in which their learning takes place.

Children and adolescents no longer spend their days alongside adults engaged in the work of the society, learning from them at first-hand. Our productive system is such that we do not need the labor of the young, and we have decided that it is better for them to be in school. To carry out the school’s purposes we have needed and created a special class of persons—teachers. These adults perform a vital social function. It is, however, one which removes them somewhat from the mainstream of society’s functioning, and from the subjects about which they teach. Thus a teacher of government is not usually involved in politics or public administration; a teacher of biology is not usually involved in farming, animal breeding, or doctoring; a teacher of chemistry is not usually doing a chemist’s work in a plant or research laboratory, etc. Nor does the training of a teacher usually include first-hand work with the subject about which he or she will later teach.

By contrast, today’s students learn primarily in classrooms, through books they read and things they are told by teachers. In this way they “encounter” major aspects of the outside world: government and politics (“civics”), growing things (“biology”), social issues (“problems of democracy”), how things are made (“chemistry”), why things work the way they do (“general
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...sciences” and “physics”), how our country came into being and grew westward (“history”), how business functions (“economics”), how people talk in other countries (“foreign languages”), how people think, feel and relate (“English literature” and “Psychology”), how people figure things out (“mathematics”), etc.

Actually, none of these “subjects” is a disembodied entity unrelated to the real world. Each is in a school’s curriculum because it does in fact deal with something in the actual world. The most abstract and theoretical subjects—philosophy, say, or physics—gain a place in a student’s learning because they bear some relation to understanding the environment surrounding us and man’s way of living in or dealing with it.

The curious thing about modern education is how far the learning process has been separated from first-hand experience of the subject being learned about. Written and spoken words have taken the place of much which in earlier times was learned through actual experience. There are many reasons for this, not least of which is our vast accumulation of written knowledge. The important thing to note, however, is that the substitution of words for first-hand experience often short-circuits the human impulse to explore, understand and master. Our word-and-book-bound culture cuts off much of the feedback which is essential for growth and adaptation. The learning process is interfered with, and the result is a degree of mal-adaptation which impedes the young’s ability to deal successfully with the environment.

The general thesis of this essay is that we can re-invigorate the learning of some subjects by exposing students to real experience of those subjects, as well as to books and classes about them. The term “learning” covers many complicated processes but basically it means (according to Webster) “to gain knowledge or understanding of, or skill in, by study, instruction or investigation; to receive instruction concerning; to fix in the mind; as to learn a lesson; to learn dancing; to learn to skate; to learn the violin.” Classroom and book learning proceed mainly
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through attention to words and to the fixing of words, ideas or information in the mind by a conscious effort and through memory (including drill, repetition, examination, etc.). A significant dimension is added when the information or idea is encountered in a setting in which it is illustrated, used or applied. Actually, in learning a bodily skill such as dancing, skating or playing the violin, the process moves quite quickly to efforts to do something with the body, feet or fingers. Words of instruction precede and accompany the doing; but no one would make much progress from words alone without the contact with reality involved in moving the limbs and feet, or pulling the bow across the violin strings. The same is true of learning by natural groups in prehistoric periods. Invariably, the learning included a major element of acting and doing; in hunting, making tools, food-gathering, building shelter, skinning animals, preparing food, etc.

Nor should we underestimate the complexity of the intellectual processes involved, or the way in which the mind of early man dealt with abstract matters, processes over time, or complicated techniques (see, especially, Marshak’s recent book on *The Roots of Civilization*). Education in a number of areas today—auto mechanics or doctors, for example—involves similar acting or doing. No one would think it desirable to confine students of autos or medicine entirely to books and lectures, without an opportunity for learning at first-hand, taking engines apart, dissecting cadavers, etc. Nor would one happily entrust his car or body to a mechanic or surgeon who had learned only from classes and books.

Learning which includes an experience illustrating the idea or knowledge concretely, or showing its application and use (by the student or someone else), or providing an example of an action, behavior or process from which an idea or principle can be induced, can be more powerful than class or book learning alone. The idea is reinforced by the actuality. More than that, the idea will probably by modified, embellished, or refined, by the experience. Most of all, the idea becomes more fixed in the learner’s mind than when memorized. The feedback process
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makes it more a part of him: more integrated in his consciousness, more useable, more functional. This, I believe, is closer to the Greek ideal of learning, as well as to the learning of children in a natural state. It is a return to the original way in which the young have learned for most of human existence. I suppose this is the reason for things like Cuisenaire rods, and why Sylvia Ashton-Warner had success with her Maori children by having them pick words which they connected with important prior experience.

One general observation which many have made about current middle and upper-class adolescents is that their prior education has made them highly verbal. Too many cannot write adequately, but most of them can talk—sometimes ad infinitum. When we made Outward Bound obligatory five years ago, we found an interesting and unanticipated dividend. At first, the instructors reported, the students tried to overcome obstacles by talking their way through or over them. They soon found, however, that there is no way to get up a mountain that verbal facility can accomplish; one simply has to climb it! A healthy thing happens when the young are reminded that reality, not words describing reality, is what learning is about.

When experience is brought into the learning process, what happens to the learner himself is equally important. For any one of a variety of reasons a student may not have prospered in his or her early years. The student may not have been particularly verbal, may have had conflicts with a teacher, or may have been pre-occupied with other needs or activities. By the time the student reaches high school he or she may entertain doubts about his or her ability to learn, reinforced by previous grades and teachers’ comment. A course which includes some direct experience may have a positive consequence for such a youngster. He or she may come up against something which challenges and intrigues in a way that books and classes have not. The direct experience may seem more real, and it involves feedback: it can ask him or her to test an idea, or deduce it, or use it. The student becomes more psychologically involved in the learning
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experience, and things may happen which fix the new observations or ideas more firmly in the
student’s mind.

When such students discover that they are not “dumb” and that learning about one subject
can be interesting, even exciting, they frequently become better in other subjects as well. They
get over the disabling notion that something is wrong with them, and begin to “find themselves.”
Frequently their teachers may see them differently and interact with them in a different way.
When teacher and student meet each other in the context of doing, observing and experiencing,
new dimensions may be added to their relationship.

The foregoing suggests some thoughts about the future preparation of teachers. Until a
century or two ago, those who taught learned primarily, or even exclusively, from practical
experiences. Teacher training now, however, tends to concentrate on class and book learning.
Would it be desirable for future teachers to have opportunities for some appropriate first-hand
exposure to the subjects about which they expect to teach? It seems just as limiting to confine the
training of teachers to books and classes as it does students. In addition, it might be desirable to
develop channels through which teachers could periodically bring practitioners of their subject
into some relationship with their students. The “new teacher”--with both academic and
experiential training--could be augmented by the practitioner, and together they would transmit
additional insights and vibrations because of their first-hand experiences. They would be
somewhat more like the adults who guided the young men’s first hunt, or the senior lawyer who
supervises the young lawyer’s first trials.

Having said all this, I would be the first to recognize that “experience” is no panacea for
all our learning ills, and that what is needed now is sober and careful experimentation with the
learning possibilities of various kinds of experience. There are clearly great differences in the
way in which direct experience can be combined with books and classes to enhance learning in
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various subjects. Books are here to stay, and we have expended large sums at our school to assemble a top-flight library. We have, however, only begun to explore the possibilities of mixing experience and verbal learning, but as of now can report that at the Athenian School we have found several traditional subjects in which elements of direct experience can feasibly be incorporated. Some examples follow. After them are some ideas for other experiments which we might undertake in the future.

1. **Biology** – Biology and other sciences have in modern times realized the value of laboratory work, and in fact, many colleges require one year of a “laboratory” science for admission. Labs are, obviously, efforts to give the student an opportunity to encounter some parts of a subject at first-hand.

For two years we have given a course at the Athenian School in Field Biology, which makes use not only of biology texts, classes and laboratories, but which every other weekend (from Thursday afternoon to Sunday evening) take the students into the field to encounter at first-hand and in a natural setting the facts, artifacts, and ideas previously dealt with in class, books, and laboratory.

When, for example, the course deals with human physiology, nutrition, and stress, students record the changes in their own bodies under varying circumstances. Before going on a strenuous Outward Bound-type field trip at high altitudes in the Sierra, they measure their respiration, pulse, blood pressure, caloric intake, etc. while on campus at sea level. They then do the same thing at high altitude after considerable strenuous exertion, with measured food intake. The result is a more realistic awareness of these matters and the principles involved.

In the same way, students study the flora and fauna that are characteristic of a particular area in the mountains and valleys, and then take a trip to observe specimens in
the field. The journals and field notes which they made are revised when they return to
the class and laboratory.

Similarly, after doing class and laboratory work on the anatomy, physiology and
ecology of aquatic vegetation, invertebrates, fish and waterfowl, they undertake extensive
fieldwork on ponds, lakes, streams, rivers and oceans, observing at first-hand the forms
of life in and on these different bodies of water in nearby areas of California.

In like fashion, after class and lab work on geology, volcanoes, mountain
formations, rocks, etc. they take field trips into areas with rich observable data: the
volcanic areas around Mount Lassen, and the Death Valley area (on a 7-day backpack
trip across the Valley).

2. **The Bill of Rights** – Instead of a civics course, the last several years we have given a
course built around key opinions of the U.S. Supreme Court concerning individual rights
and responsibilities: the power of police to arrest and to “stop and frisk;” searches and
seizures; electronic surveillance; the privilege against self-incrimination; the right to
counsel; the right of minors; desegregation; and dissent and civil disobedience. Students
read full-length opinions of the court, brief them, and discuss them in class. Students
have put on a mock trial in class of a student sit-in, each student acting as prosecutor,
defense attorney or judge. They have annotated the Bill of rights and compared it with
rights in other countries (e.g., China).

Following the seminar, students have the opportunity to intern full-time for a
minimum of one month at the nearby country Public Defender’s office, with full
academic credit. A new 6-term calendar which we adopted this year (discussed later)
makes this much more feasible than previously. Students work alongside lawyers as they
handle their cases, from interviews to determine financial eligibility, to pre-trial
conferences of judges and attorneys, to trials and appeals. As in the field biology course, the students have a chance to see legal rules and principles as they are translated in practice, and to take a small role in effecting that translation. The course is difficult and requires hard work; we use a regular law school casebook. But the subject matter, as compared with reading and learning the Bill of Rights, is intensely real. The Court cases are resolutions of actual situations, and work in the Public Defender’s office deals with the facts of such cases in the making.

3. **Urban Studies** – Three years ago we established the Athenian Urban Center in San Francisco. It provided a term’s option for seniors, again with academic credit. Students and staff lived and worked together in an old Victorian house in the center of the city. The main portion of their time was spent in full-time, unpaid internships in government agencies, social organizations, the media, business, schools, political campaigns, cultural organizations, and the like. Seminars were held twice weekly to discuss internship experiences—using theory, readings and the systematic thinking of academic disciplines to give order and meaning to internship experiences. The students read June Jacobs’ *Life and Death of an American City*, David Gordon’s *Problems in Political Economy: an Urban Perspective*, Mumford’s *The City in History*, Jack Finney’s *Time and Away*, and *Cities*, published by Scientific American. The main goal was to provide a more realistic way of learning about the processes, problems and institutions of modern urban America. At the same time, the students were jointly responsible for food preparation and procurement, and the running of the house.

4. **Astronomy** – We have taken some small steps towards the equivalent of fieldwork in the area of astronomy. We have an astronomy course in which students regularly observe various heavenly bodies through our several telescopes and take advantage of nearby
larger telescopes and planetaria for the same purpose. In addition, we have provided opportunities for students to grind lenses and assemble a reflector telescope, learning at first-hand in the process the physical laws and principles involved. We hope to build a small observatory on our campus.

5. **Foreign Languages** – In foreign language instruction it is our hope, only partially realized at present, to get our students as rapidly as possible into homes (in Mexico, Spain, Quebec, or France) in which only Spanish or French is spoken. We have had field programs in Mexico and France during vacations for this purpose, but our aim is to structure our academic calendar so that we can do this during the regular school year. We believe that adequate learning of a foreign language involves its use with natives in the country in which it is spoken, including opportunity to experience at first-hand the literature, attitudes, values and accomplishments of the culture. A number of other schools have done this on a systematic basis, and we hope to do so in the year ahead.

One of the main problems we have encountered in trying to bring experience into academic learning is the regular school calendar and schedule. With classes meeting five days a week, it was difficult to schedule field trips during the week or for more than a weekend, without a student having to miss other classes. It has also been difficult to arrange for students to be off-campus for a full term (e.g., in a foreign country, at the Urban Center, or at the Public Defender’s office), and at the same time to take all the other courses required for graduation and college.

This year we have gone onto a new calendar of six terms, each of six weeks in length. In each term a student takes one major course and (usually) one minor. While we have not worked out all the problems yet, it is a more flexible schedule and permits field trips without as many class conflicts, including off-campus programs for a full term. It also makes it possible to secure
as adjunct faculty for six weeks persons who are practically involved in an important subject, but who would not otherwise be available as regular full-time teachers.

6. **Outward Bound** – For the last five years we have required all juniors to return three weeks early in August for a wilderness training program in the Sierra, taught by qualified Outward Bound instructors two of whom are regular members of our faculty). The value of the program has been almost unanimously affirmed by students and faculty alike. Until this year its chief worth lay in its value in developing character, self-confidence and sense of self, as a result of exposure to physical challenge and to intense small-group interaction, including the stresses of hiking, climbing and moving across the mountains as a group.

This year the new calendar enables us to experiment with an enriched wilderness training program during a regular six week term. Half the term will be spent in the field (in a remote part of the Panamint Mountain range adjacent to Death Valley). During a preparatory period the students will receive instruction in first-aid, field biology and geology, map reading, and journal writing. A final week on campus will deal with report-writing, personal and group evaluations and follow-up activities. The course will thus move over to include formal learning, as well as the development of character.

7. **Medical Biology** – We have begun a new program in medical biology this year under our new calendar. It has a strong academic component and uses a college level text on human physiology. Students spent three mornings per week on campus doing laboratory and class work on human physiology, anatomy and health. One morning per week is spent at the nearby Martinez Health Center, a fully staffed general hospital. Students attend a lecture by the Head of one of the departments on the program of his department. They then work and observe (in pairs) in various stations throughout the hospital, rotating each
week through nursing, X-ray, laboratory, medical records, physical and occupational therapy, multiphasic physical examinations, etc. The students recently spent five hours watching an open heart operation and a thyroidectomy, with the surgeon describing over a microphone what he was doing as he worked. A further day each week is spent studying and visiting other community health agencies (mental health clinics, coroner, county pathologist, county hospital [cases of chronic alcoholism, emphysema and lung afflictions from smoking, etc.], Public Health Service facilities, Planned Parenthood and the like). The goal is to learn about individual health, about health problems and health care generally, about the institutions with which our society cares for the health of its members, and most of all, to improve the students’ own health behavior. The first offering of the course was regarded as sufficiently successful by all concerned that we shall offer an optional further term involving full-time internships at the hospital.

8. **History of West** – This year we gave a course in the American West which involved reading contemporary accounts and histories of immigrants, explorers, cattlemen and miners (including Mark Twain’s *Roughing It* and *Mining Frontiers of the Far West*, a scholarly account of the geology and history of western mining). The purpose was to examine the influence of the West on American life and character. Class work was combined with fieldwork, including a visit to the ghost mining town of Bodie. Students then sought to locate and follow in immigrant route over the Sierra west of Kit Carson Pass. They were supplied with a copy of a pioneer journal (Thomas Christy’s *Across the Plains*, edited by Robert Becker), and a current topographical map. They sought to identify the trail at first-hand and experienced the difficult conditions under which pioneers crossed the mountains in wagons drawn by oxen. They also got an idea of the problems which historical research faces when it tries to reconstruct past happenings.
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from a contemporary account. The students also did a videotape movie (with sound) of pioneer days (including a bank robbery) using Bodie and the reconstructed town of Columbia for scenery and backdrops.

In addition to the foregoing, which have taken place during the regular school year, we have had the following vacation programs: (1) a professionally supervised excavation in the Point Reyes National Seashore, searching for artifacts from the Sir Francis Drake expedition, plus artifacts from the Indian villages near where Drake came ashore; (2) a professional dig in Tehuacan, Mexico, searching for evidence of the first groups which planted and domesticated wild corn, and studying this social organization of pre-conquest Indians and changes resulting from the conquest; (3) a month with native Eskimos in the Village of Saboonga on St. Laurence Island, Alaska, observing and living with a primitive culture in action and studying the ecological balance which the Eskimo has achieved for survival under adverse physical conditions, and the impact of western culture on Eskimo life; (4) a program in Washington in which students served as interns assisting in offices of congressmen and senators and learned about issues being presented for legislative action; and (5) a month at a remote medical clinic near Ajoya, in the State of Sinaloa, Mexico, during which the students lived with native families and assisted in projects at the clinic.

So far as the future is concerned, we have plans in various stages of development for interrelating regular learning with experience in the following additional areas:

1. **Local Government** – We plan to use as subject matter events and issues in our own county. One current example includes the problems, issues, and procedures involved in the efforts of our next door neighbor, the 5,000 acre Blackhawk Ranch, to mount a major planned community development, in the face of many questions raised by the County Planning Commission, the Sierra Club and other
groups. This course would involve a first-hand look at how forces such as these converge and are handled by the County Planning Commission, the Board of Supervisors and other bodies. The students would also study the lawsuit that is currently under way, challenging the environmental adequacy of the planned development. This approach to local government in action will use textual materials augmented by various current realities of importance to the County and to the School. A goal of the course will be for the students to prepare reports from time to time on such things as the Blackhawk Development, as examples of how government and planning function in a suburban county. The reports will cover the facts, background, history and actions of the individuals, organizations and governmental processes involved, and may be published for wider circulation.

2. **Economics and Business** – We believe there are a number of possibilities in this important area, and that fieldwork placements are quite feasible (students from the Athenian Urban Center have previously interned at the Bank of California and the Crocker Bank in San Francisco). Among the seminars we are planning are the following:

   a. **Business Opportunities** – The purpose of this course would be to learn about individual enterprise and how small businesses start and operate. Students would work with a successful business entrepreneur in exploring whether Athenian students could themselves organize and run a small business (e.g., a small canning operation). All aspects of feasibility, financing, marketing, etc. would be explored, with students interviewing bankers, suppliers, distributors, etc. and reading relevant background material. If planning were successful, students would then undertake to
organize, raise the capital and start the business. Profits, if any, would go to the School’s scholarship fund. The business would be a continuing school enterprise.

b. **Private Enterprise** – This course would focus on successful enterprises (both for profit and not-for-profit) in the San Francisco Bay Area. Its goal would be twofold: first, to make students more aware of how individuals can create successful individual careers (as alternatives to careers with large organizations); and second, to improve students’ writing skills. Students would comb the Bay Area for persons who have established a profitable business or a successful nonprofit institution (school, art gallery, etc.). A student would interview each such person and write a short history of his life: how he decided to do what he did, how he prepared himself, and how he carried it out. Students would do background reading about the area of each such enterprise, and use such material to provide perspective in each essay. The resulting essays would be collected and published in a student volume on “Independent Career Possibilities.”

3. **Child Psychology and Parenting** – This course would combine class and book learning about basic principles of psychology and the rearing and care of children, with fieldwork in nearby childcare centers. As a society, we give young people nearing the age of marriage and childbearing very little help in understanding what it means to be a parent, the consequences of different modes of child-rearing, and some of the things they will encounter when they begin a family. They would read extensively in the literature of child development, see how
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various ideas are translated in practice at daycare centers, and discuss both theory and practice in class sessions.

4. **English** – In this course students would interview professional and working people who live within a reasonable distance of The Athenian School about the meaning of their work or occupation. The students would edit the interviews and convert them into a series of essays on “work” to be published in book form. They would read Studs Terkel’s *Working*, among other things, as an example and aid in their endeavor.

5. **Geology** – Using the writing of John Muir, students would study both his life and accomplishments, as well as the geology and development of Yosemite Valley. They would also analyze alternatives for the future public use of the Valley and, through discussion with Park Rangers, naturalists and others, develop one or more land use plans for the Valley’s future.

6. **Architecture and Community Planning** – This course would combine classroom work and reading with fieldwork in offices of architects and community planning agencies. The course would be a companion to the course on local government, but would look at the problems of growth and community through the eyes of persons engaged in planning both individual structures and community regulations respecting them.

7. **California Studies** – This would be an interdisciplinary study (historical, biological-ecological, and sociological) of California, concentrating on three areas—one urban, one agricultural and one mountainous—to learn about their ecologies, water sources, historical growth, ethnic composition, politics, etc. It would start with Jed Smith when he walked up the coast and follow California’s
development through the gold strike to the present, from a population in Junipero Serra’s time of about 130,000 (mostly Indian) to today’s 20 million. It would include field study in each of the three areas, from the standpoint of the three disciplines involved (by a teaching team of three, representing each of the disciplines). San Francisco might serve as the urban area. For agriculture we could use the nearby Delta region, with all the complex water issues connected with it; or the Imperial Valley, including the uses of the Colorado River water and the salinity problems now being encountered at the exit of the Colorado in Mexico.

8. **Western History** – This “Journey Through Time” would be a study of the geology, ecology and human history of the Colorado River and Grand Canyon, with three weeks on campus and three weeks rafting down the Colorado River. John Wesley Powell’s diary would be used for reading when on the river (e.g., when the class arrived at Separation Canyon, they would be reading about the mutiny as Powell wrote about it while at that spot). Exploration of mescal pits and search for tools, etc. near the river would also be a part of the fieldwork.

The foregoing are examples of ways to bring a closer relationship between the subject being studied and the reality to which it relates. The goal is to introduce experience of the subject into the students’ minds, along with the words of books and teachers, and hopefully to recapture the intrinsic vitality of the learning involved. In no way does it undercut the role of books and teachers; rather, it augments their effectiveness by adding another dimension to the learning process.

Learning of this kind does not affect the college preparatory character of the Athenian School. The students still must meet the same requirements, cover the same basic disciplines,
and take the same college board exams. I would not want, by emphasizing the foregoing examples, to leave the reader with a distorted impression of the school’s curriculum, since a substantial majority of our courses continue to be basic academic courses in math, English, science and the like. The results of the entire program to date have been good, and our graduates attend some 80 colleges and universities.

Nor are we lessening in the slightest the intellectual rigor which we expect in our courses and our students’ work. Any fieldwork undertaken must ask as much of students as class work. Some experience-related courses actually require more rigor than conventional courses; the logical analysis of Supreme Court opinions is more intellectually demanding, for example, than learning the Bill of Rights. Fieldwork must never be allowed to dilute the intellectual standards required for mastery of any subject.

It will be noted that some of the foregoing courses involve a day-to-day or week-to-week alternation between class learning and fieldwork (e.g., Medical Biology). Others, such as the Bill of Rights course, require a full period of preparatory study before the student is qualified for internship responsibilities at the Public Defender’s office. Some run for a short period, others full-time for a month or more. We are feeling our way among all the various possibilities; some work well for one course or teacher, other for another.

Related but different purposes may be served by fieldwork. In some instances, it may help to awaken a student’s interest in an entirely new subject. In others it may give a vivid first-hand experience of a process that the student has learned about in class but which he has had no way of knowing at first-hand. I was intrigued to discover, for example, that the new medical school at the University of California’s Irvine campus starts first-year medical students immediately on dissection of cadavers as part of their course in anatomy. In still another,
fieldwork may give a more advanced student an opportunity to delve into a subject in greater depth.

Thus far, all our courses with an experiential component have been offered on an optional basis, except for Outward Bound. We require all students to take this in the 11th grade, primarily because of what it does for their personal, rather than their intellectual, development. At least for the near future, we expect that our experience related courses will remain optional. Some of them do, however, satisfy both our graduation and college admission requirements. Thus, for example, we require a year of a laboratory science for graduation, and some colleges require the same for admission. These requirements can be satisfied by taking either our regular biology course, our field biology course, or medical biology plus aquatic biology.

It should be noted that the difference between “words” and “experience” is one of degree and is not absolute. There is a graduated “experiential” spectrum which runs from a book or lecture, at one end, to the opposite extreme where the student himself has the described experience. Written or spoken words can themselves range from the generally descriptive as in a civics text), to the greater concreteness of the case approach (as in the casebooks used in law schools or business schools), to a factual description by a practitioner of a subject (e.g., a Public Defender)—a description which is usually more vivid if given in person rather than in writing. Pictures generally convey more than words; moving pictures more than still pictures. Seeing something in person usually conveys more than a movie of it. And doing something, as well as observing, usually carries more impact than watching alone. Thus, a teacher can range across a broad spectrum in seeking to enhance the learning of a subject by experience, or approximations of it.

Some subjects seem less suited for incorporating outside experience, particularly mathematics. We do offer a course in computer programming, and have had one student intern at
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the computer center of a major bank. But we are not sure that the learning of algebra, geometry, trigonometry, or calculus would be greatly facilitated, even if one could identify experiential possibilities (with architects, engineers, research laboratories, etc.). In any event, here and elsewhere the question of efficient use of student time must be considered. Fieldwork is expensive in time (as well as in dollar costs if trips are involved). Hours should be apportioned with the same frugal regard to priorities and a student’s total time distribution as are other courses and activities. This is especially true of skill subjects requiring practice and reinforcement over a lengthy period to time. Under our six-term calendar, subjects of this kind may continue over several terms.

Another caution is in order. Raw experience may sometimes be a good thing, but the learning value of an experience can seldom be realized without a teacher’s intervention. Random experience is much less valuable for learning than carefully planned experience, and the teacher must select from among an endless array of possible experiences that one (or ones) from which the greatest learning can be derived. And he must make sure that, during the experience and in subsequent discussion and analysis of it, the maximum amount of learning is realized. The teacher is indispensable for helping the student see the relation between the experience and the principles involved.

Favorable conditions for experience-based learning exist where the following factors are present:

1. The subject has an accepted place in the curriculum and deals with important principles or basic knowledge; and

2. There is a situation near at hand which exemplifies one or more of the basic principles or aspects of knowledge; and
3. It is feasible for students to observe and/or become involved in that situation; and

4. There are adults connected with that situation who are able and willing to help students in gaining a first-hand understanding of it; and

5. The school has a teacher (or an adjunct teacher) who can identify the likely opportunity, arrange and supervise the student’s experience of it, and help students integrate the experience into their classroom learning.

Can one presently measure the consequences of experience-related courses, especially in comparison with courses without experience? We at Athenian are eager to devise ways of evaluating the consequences of our courses. We know how our students feel about them, and, as teachers, we have a visceral sense of their value to students. Clearly, however, we and others would be helped if there were objective data to analyze. We did have a modest evaluation made (on a very limited budget) of the first year of the Athenian Urban Center. The Wright Institute, a social science research organization in Berkeley, interviewed and tested students before, during, and after each of the two terms. They found evidence of increases in self-direction and the assumption of responsibility, and an improved ability to relate to parents and adult authority. No before-and-after measurement of learned knowledge was attempted, and we felt this was the least successful part of the program, primarily because the students’ internship experiences were too diverse to provide an intellectual focus for the seminars. We are also participating in the current research project being conducted by the National Association of Independent Schools on off-campus learning. Hopefully, there will soon be more objective evidence comparing classroom learning with learning augmented by experience.

I am glad that the College entrance Examination Board and the Educational Testing Service are reviewing their examinations and the alternative forms which they might take. It
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would be a step forward, in my opinion, if examinations or other modes of testing could assess the learning which results from courses augmented with experience—including both traditional and new dimensions of learning. I do not believe the “state of the art” has yet reached this point.

Meantime, we continue to move ahead in the belief that learning of this kind helps the student more fully to achieve his intellectual potential. At the same time, we are engaged in an equally important endeavor to facilitate the development of his aesthetic, physical, civic and personal capacities. In another essay, I plan to discuss the other half of this subject, the development of personal qualities other than the intellect. In our view, actual experience is even more essential here than it is for intellectual growth. In both spheres we strive for the ideal of personal development which was cherished by the Greeks, especially by the Athenians for whom we are named.