Jesuit Educational Quarterly

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Our Contributors

In this issue we present some of the papers read at the Annual Meeting of the Jesuit Educational Association. Other papers will follow in succeeding issues.

Father Gustave A. Weigel of Woodstock College read a paper which was the subject of much favorable comment and is here presented.

Father Edward B. Rooney, President of the Jesuit Educational Association, scans the national educational scene and gives his views on problems which Jesuit education is facing or will face in the near future.

Father John W. Sullivan, director of the Mathematics Department of Boston College High School, reports on the movement which aims at bringing high-school mathematics courses into line with the advances of modern mathematics.

Father Andrew L. Bouwhuis, Librarian of St. Peter's College, presents a paper on a subject in which he has taken a vital interest for many years—the place of the library in Jesuit schools and colleges.

Father William J. Mehok, laboring in the Curia in Rome, gives us the results of the first stage of his survey on Jesuit educational institutions of the world.

Father J. Barry Dwyer, Province Prefect of Studies for the Chicago Province, was killed in an automobile accident on January 15, 1957. His obituary is written by Father Julian L. Maline, Province Prefect of Studies for the Detroit Province.

Jesuit Educational Quarterly

June 1957

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THE JESUIT EDUCATIONAL QUARTERLY, published in June, October, January, and March by the Jesuit Educational Association, represents the Jesuit secondary schools, colleges, seminaries, and universities of the United States, and those conducted by American Jesuits in foreign lands.

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ADDRESS COMMUNICATIONS TO THE EDITOR

49 East 84th Street, New York 28, N.Y.

Program of Annual Meeting
Jesuit Educational Association

MARQUETTE UNIVERSITY, APRIL 21–22, 1957

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GENERAL MEETING OF ALL DELEGATES

EASTER SUNDAY, APRIL 21, 8:00 P.M.

Marquette University High School, 3401 W. Wisconsin Avenue

Presiding: REV. RICHARD T. JONES, S.J.

Greetings . . . . . VERY REV. LEO J. BURNS, S.J., *Provincial, Wisconsin Province*

Welcome to Milwaukee . . . . REV. EDWARD J. O'DONNELL, S.J.

Report of the President . . . . . REV. EDWARD B. ROONEY, S.J.

The Heart of Jesuit Education – The Teacher . REV. GUSTAVE A. WEIGEL, S.J.

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DINNER MEETING OF ALL DELEGATES

MONDAY, APRIL 22, 6:30 P.M.

Brooks Memorial Union Ballroom, 620 N. 14th Street

Presiding: REV. EDWARD B. ROONEY, S.J.

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MEETING OF COLLEGE AND UNIVERSITY DELEGATES

MONDAY, APRIL 22, 10:00 A.M. — 12:30 P.M.

Room 207 — Brooks Memorial Union

Presiding: REV. EDWARD J. O'DONNELL, S.J.

J.E.A. Commission on Liberal Arts Colleges:

Report of Commission . . . . REV. WILLIAM F. KELLEY, S.J.

The Significance and Place of Scholarly Research and Publication in the Jesuit College and University . . . . . REV. WALTER J. ONG, S.J.

What Can Be Done to Develop a Successful Program of Scholarly Research and Publication . . . . . REV. WILLIAM J. GIBBONS, S.J.

MONDAY, APRIL 22, 2:00 — 4:30 P.M.

Presiding: REV. CARL M. REINERT, S.J.

Securing Scholarships and Fellowships for our Graduates . . . . . REV. EDWARD F. CLARK, S.J.

The Place and Function of the Library in the Jesuit College and University . . REV. ANDREW L. BOUWHUIS, S.J.

Reasonable Norms for a College Admissions Policy . . . . . REV. EDMOND D. SMYTH, S.J. with REV. ROBERT R. LEONARD, S.J.

MEETING OF JUNIORATE DEANS

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Room 203 — Brooks Memorial Union
Presiding: REV. HILLARD L. BROZOWSKI, S.J.

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MONDAY, APRIL 22, 10:00 A.M. — 12:30 P.M.
Room 101 — Brooks Memorial Union
Presiding: REV. JAMES B. CORRIGAN, S.J.

J.E.A. Commission on Secondary Schools:
Report of the Commission . . . REV. J. VINCENT WATSON, S.J.
The Movement to Modify the High-School Mathematics Program . . . . REV. JOHN W. SULLIVAN, S.J.
The Teaching of Religion in Jesuit High Schools . . . . . REV. JOHN F. LENNY, S.J.

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Presiding: REV. ROMAN A. BERNERT, S.J.

Intensifying the Professional Attitude of High School Teachers . . . REV. THOMAS F. MURRAY, S.J.
The Rationale of the "Speaking" Series . REV. JOHN H. WILLIAMS, S.J.
The Significance of Advanced Standing Programs for Able High-School Seniors REV. GERALD R. SHEAHAN, S.J.

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Administrative Cooperation in the Integration of Undergraduate and Graduate Programs of Studies
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Faculty Requirements and Standards in Collegiate Schools of Business . . REV. THOMAS F. DIVINE, S.J.
Discussion and Problems from the House

The Heart of Jesuit Education— The Teacher

GUSTAVE A. WEIGEL, S.J.*

It is not an uncommon persuasion that all Jesuits are poured out of the same mould. It has been stated by many that we are all the same, and that our thoughts are identical and our action uniform. This supposed oneness of all members of the Society of Jesus is not recognized by the Jesuits themselves. Nor do those who have close contact with us, our students, for example, consider us all to be like identical peas in a pod.

Within the Society, Jesuits recognize different traditions. The German Jesuit who has dealings with Spanish Jesuits considers the Spanish Jesuit way quite alien to his own. The English Jesuit has customs singularly proper to his own section of the Society. The ways of the American Jesuit usually cause perplexity for his European confreres.

Nor is it merely a question of inevitable cultural variations within the one worldwide Society. Even in any one cultural unit, the Jesuits certainly consider one another very different. They feel no necessity of being like any one else. There is one Jesuit ideal which all consider to be the normative orientation of their lives, but there is no concrete Jesuit image which all strive to imitate. We feel quite free to be ourselves integrally, nor have we ever been told that this is contrary to the spirit of Ignatius. Certainly our great men had angular personalities easily distinguishing them from others in the Society. Peter Canisius and Robert Bellarmine were hardly products of one mould. Francisco Suárez and Louis Billot cannot be confused by any stretch of the imagination. In our own American Society men like Daniel Lord and Edmund Walsh were rich personalities with all their individualities well preserved.

The basis for the erroneous opinion that we are all alike comes from the organizational control of Jesuit activity. More perhaps than in other orders, Jesuit activity is collectively structured by laws and decrees. The action of the Society must be one, so as to give the greatest possible efficiency to work which is a corporate enterprise. The 42nd rule of the *Summary* tells us to think the same thing and as far as is possible say the same thing. There should be no diversity in our approach to action. Unity and conformity are to be cultivated. So too the 4th rule of the

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* Presented at the General Meeting of All Delegates, Annual Meeting of Jesuit Educational Association, Marquette University, April 21, 1957.

Summary ordains that the Jesuits live the same kind of life. For our teaching, *rationes studiorum* have been repeatedly constructed to assure the essential uniformity of our educational practice and institutions. There are rules for the various kinds of working groups of the Society. In fact, it is true to say that no enterprise of widespread development is long free of a corpus of regulations and orientations.

Although all this legislation is at hand, yet the average Jesuit does not feel that he is being regimented. He will always point out that the directives are quite flexible in their application. The rules and laws are rational guides rather than legal hobbles. Ignatius himself on writing the Constitutions proposed his own conception of Jesuit dynamism: the Holy Spirit directing the individual Jesuit from within. He wrote his laws because he was ordered to do so, and because experience had proved that some body of legislation was necessary for any efficient society. This emphasis on individual direction from the Holy Spirit is constant in Ignatius. He knew well that this would be from within the individual rather than from without, but he saw no danger in it. The same Spirit who guided the individual was the Spirit who guided the Church. Hence the individual could follow his own lights with no possibility of coming into conflict with the Church because the identical Spirit was guiding both. Hence obedience to the Church would be spontaneous in the Jesuit. The only caution to be used by the individual was to discern wisely the spirits at work within him, and to consult his superiors and spiritual guides to help him in this discernment. In the Ignatian idea there is absolutely no suppression of originality or initiative even though external norms for concrete actions are freely and even detailedly given.

This initial reflection is absolutely necessary in order to understand the present task of Jesuit education. Never before in the history of the Society have we had so many schools and such a variety of schools. This is especially true on the American scene. It was in the United States that the Society first established schools of medicine and law. Our Workers' Institutes were of course unknown to the old Society. Even the American Jesuit college, as Father Walter Ong has pointed out, is something that the early Society never contemplated.

In spite of the difference between the educational institutions Ignatius knew and the ones his American sons conduct, the Ignatian view of Jesuit schools and teachers still retains its normative value. He had a high view of learning though he was not exactly a learned man. He acquired laboriously what we could today call a junior college education and in addition he did a year and a half of theology, without ever finishing his theological course. According to the demands of today's Canon Law, he would never have been ordained. Yet this man highly

respected learning and made the young men who entered his society go to the best universities of his time, mixing there with the non-Jesuit students from whom they were not segregated.

We all know that it was not the original intention of Ignatius to have his men go into educational work. The opening of Jesuit schools was not on Ignatian initiative but due to the pressure of extern requests. Laymen and prelates recognized in the Jesuits solidly educated men singularly equipped to found and conduct the new kind of school the Renaissance wanted. The apostolic opportunities offered by such institutions gradually persuaded Ignatius to meet the wishes of friends of the Society.

This brief recollection of what happened in the sixteenth century explains the Jesuit attitude to Jesuit education. Ignatius found himself supplied with university-trained men and he insisted on university training for the candidates of his Order. The defense and expansion of the Church needed schools dedicated to secular leaders of the communities. Institutions of secular learning would be the occasion for giving an Ignatian formation to the social stratum Ignatius had strategically selected for conquest. The college automatically brought the leader-class to the Jesuits, saving the Fathers the labor of pursuing them individually in dispersion.

For Ignatius a Jesuit school was more than an institution to be controlled by Jesuits. He wanted Jesuits in direct contact with the students. It is not rash to suppose that he would have been reluctant to accept schools where the teaching-body was to be formed exclusively by non-Jesuits working under Jesuit direction. As Ignatius saw it, the schools put the Jesuits right into the lives of the pupils, and that is precisely what the apostolic Loyola desired.

It is clear, then, that the Jesuit teacher is the very heart of Jesuit education. It will not be Jesuit education if it employs only non-Jesuits to execute a Jesuit plan of education. The Ignatian school is the ingathering of men on whom the individual Jesuit will work immediately.

Jesuits are well aware that the Society was not founded to conduct schools. They are equally aware that education did become the outstanding work of the Company. In the light of this knowledge, though improbable to us, it is yet conceivable that the Society at some moment of its history would drop its school work and engage principally in some other activity. If such an event were to take place, the Society would not have changed essentially. It would be exactly what it was in Loyola's time and what it is today. The heart of the matter is that for the Jesuits their schools are means, not ends. Nor are they even necessary means, as is for example the scholarly formation of the Jesuits themselves.

This truth can be the source of disorientation. Recognizing the instru-

mental value of our schools, some of Ours may be tempted to be cavalier about their academic work. Since it is a means whereby we can reach the neighbor intimately, such men will concentrate on the apostolic opportunity presented by the schools. They will consider the formal teaching of secular learning as relatively unimportant, seeking only the spiritual formation of their students. The teaching of the sciences and letters can become shabby without any qualms of conscience being produced. Any slight uneasiness is stilled with the reflection that after all we are in the teaching business only to bring men to God in His Church.

Such thinking is vicious and shows a thorough misunderstanding of the Ignatian concept of the instrumentality of our educational institutions. The colleges are apostolic means only if they are excellent and efficient schools. As soon as it would be discovered that our institutions were mainly nurseries of piety and armories for apologetic defense, they would cease to be means for the Jesuit apostolate. People go to school primarily to acquire secular learning. If our colleges are not vibrant centers of solid scholarship, serious-minded students will not come to us. Ignatius did not want mere schools. He wanted his schools to be the very best of their kind from the scholastic point of view.

A more subtle variation of the misunderstanding of the true meaning of the instrumentality of our colleges can creep into our work. It is more dangerous than the flagrant cheapening of the educational product which can never be a widespread phenomenon in the Society whose scholarly seriousness is always stressed on its members. The greater danger referred to is the refusal of the Jesuit to be a personal individuality. Over the years the Society has formed a method of teaching. We also have traditional programs for our teaching, and many of the subjects themselves have a traditional form and content. The individual Jesuit can easily come to believe that the support of this tradition is his main task. It is the tradition, not he, which achieves our educational goal. All the Jesuit need therefore do is defend and carry on the tradition. *Nihil innovetur nisi quod traditum est.*

The maxim of Pope St. Stephen is excellent in matters of faith and revelation. But through misunderstanding it can be deadly in cultural enterprises. Unchangeable laws of the Medes and the Persians will necessarily destroy the Medo-Persian empire.

In any tradition there are two elements. One is the dynamic insight of the rationalizing nisus in a vividly conceived goal toward determined action in a concrete context. The second element is the actual historical translation of that insight into an action-pattern. What makes the tradition valuable is the first element, its dynamic approach to an existing problem in the light of clearly understood objectives. The second ele-

ment, the set pattern of action, is valuable as long as the original problematic exists. If that problematic changes, the created pattern loses its significance and sanctity. In such a situation, the original tradition is still important because it formally preserves the dynamic element which of itself should produce a changed pattern of action for the new problem. Unfortunately this does not always occur because the material side of the tradition is easily divorced from its formal drive and we may be faced with a zombie tradition which goes through all the motions of being vital, but really isn't. A vital tradition is always changing substantially.

As an example of the proper understanding of tradition in the Society I would like to point to the late Edmund Walsh. Many delight in painting him as a cloak-and-dagger personality, always involved in some kind of mysterious diplomatic enterprise. Yet this is hardly an objective understanding of the man. Others like to see in him a scholar because of the books he wrote. But there is room for doubt concerning the high value of his scholarly achievements. What is beyond doubt is his valid insight into the Jesuit reality of our day. At a time when a school for foreign and diplomatic service existed nowhere, he founded one. With his smooth perseverence and great readiness to learn by experience, his department took on prestige, and a high percentage of the members of the American diplomatic corps have studied in his school. Nor was he satisfied to introduce only one timely innovation into his college. The palpable success of his first effort did not push him into glorious retirement. Relatively late in life he organized another new thing for Georgetown, the Language Institute. Again he created something new and valuable.

Father Walsh was an innovator after the heart of St. Ignatius. Father Walsh was no despiser of tradition, but he understood tradition as a living thing. This living tradition confronted with the moment of our times called for the two schools he conceived because of the tradition itself. It was not the time to bring back the spectacular presentation of Latin theatrical productions but to move out into the realm of the untried. It was the tradition which taught him this.

However, exemplary though the life of Father Walsh was, it is not directly relevant to the work of the average Jesuit. It is unthinkable that every one of the 8,000 Jesuits in this country has the vocation of introducing new schools into our colleges and universities. But yet every Jesuit teacher has to be originally himself in the classroom. Only as a self will he realize the project of St. Ignatius. Loyola would be horrified at the thought of mechanical Jesuit robots in a Jesuit classroom.

By the apostolic orientation of our Jesuit existence, we are here "to make friends and influence people." This is done differently in the dif-

ferent contexts in which we find ourselves. In any context we must speak the language of the situation. Otherwise we cannot establish influential contact. The tenth *Common Rule* obliges us to speak the language of the place we live in. The prescription is of course to be understood in its rather obvious sense, but it rests on a principle which has wider application. Any one who has had to learn new languages soon finds out that the problem is not merely a matter of dictionaries and grammars. The living language is closely fused with the spirit of the people who use it. To speak the language well, you must achieve a high degree of incorporation into the lives of the people themselves.

If the Jesuit is a teacher he must speak in the language of his discipline. To speak that language well, he must be infused by the soul of that discipline. The discipline must become incarnate in the man. He must be an academic dream walking.

In this way we live up to our tradition. In this way our tradition becomes effective in our time. To see only a static pattern of action and try to conform to it by looking at it from the outside, is not tradition but only traditionalism. We must grasp vividly the vision of goals which inspired the confection of the pattern and then the valid pattern will flow spontaneously from our inner selves. You really do not have to keep your eye on it any more. We have made the pattern our own by the assimilation of the spirit from which the pattern derived. In such appropriation the pattern will not be a stiff material mould. It will take on individual variations and adaptation to our being. Thus it becomes alive. Then we are in a position "to make friends and influence people."

There is one concrete application of this principle which can be profitably discussed by us. In our colleges so many disciplines are taught. It is patent to everyone that they are different disciplines. The mathematician is not a theologian. The physicist is not a philosopher. Yet all of these men must be present and active in our colleges because our institutions are not specialized schools but liberal academies. Since the days of St. Thomas a great change has come over the disciplines. In the 13th century all sciences were in some fashion philosophy. Certainly the physics of Aristotle is more strictly philosophy than the physics of Planck and Fermi.

Now unfortunately for Jesuits, the disciplines are taught us in an old framework. We learn the arts of expression in the light of Aristotle's poetics and rhetoric, that is to say, according to Aristotelian philosophy. Our philosophy deals with psychological and cosmological problems. The result is that we can easily be misled as to the nature of empirical psychology or of mathematical physics and their findings. Some of our young men think that rational cosmology deals with the same phenom-

ena as chemistry, but only in a superior way. Actually chemistry cannot even consider the questions in which cosmology is interested. The chemist makes no philosophical statements and the metaphysical cosmologist is utterly unequipped to make statements meaningful to a chemist.

The Renaissance scholar was a polymath. It is not altogether false to say that for him there were not many sciences but many divisions of the same science. Hence the Renaissance savant could go into all the specialized sciences because they were all branches of the very same thing. Our Society was founded in that time. In consequence the inherited pattern of our studies betrays the Renaissance outlook.

Yet today the philosopher is not welcome in the physical laboratory, because it is for him an alien and often unknown land. He cannot speak the language nor does he know the customs. He promptly tries to speak there his own language and expects his own mores. The result is only uncomfortable confusion.

There is a danger that the Jesuit citizen of some specialized discipline is in inner conflict because of a dual citizenship. He may follow his biological goals with philosophical or theological preoccupations. The result will not be biology nor theology. The students working under this man will be infected by the confusion of their master. Our Jesuit is not speaking properly the language of the place wherein he resides. His influence is going to be highly curtailed.

The Jesuit teacher as an individual person must correct this situation in himself. He must imbue himself to saturation with the spirit of the discipline in which he is engaged. He must overcome the tendency perhaps inherited from his own Jesuit formation to see philosophy or theology in quite different disciplines. His approach to his own proper science must not be from the point of departure of an apologetic either for our faith or for the 19th century preference of the construction of problems. The professor of philosophy or mathematics need apologize for nothing. Nor is he called upon to do so.

The apologetic strain in Jesuit scholarship is not a vital tradition. It was the form the vital tradition took in a moment when it was meaningful. It is not meaningful today. The individual Jesuit teacher, mindful of the essence of the true tradition, must not be distracted by a pattern-relique which is not essential. Hume, Kant and Hegel are not so much "adversaries" as milestones in the development of philosophy and are to be treated in that way. To group them under the label of adversaries immediately makes a positive study of their contribution impossible.

One danger inherent in the following of patterns instead of tradition is the elimination of time from questions to be studied. In a very genuine sense truth is timeless, but no man ever got to truth except in terms of

the questions he asked. The questions were all born in time and live exclusively in time. The question raised in the 16th century is not identical with the question as it faces us in the 20th. The very fact that answers were given in the 16th century changes the nature of the question in our age. To suppose that we can answer the current question by a simple return to the era when that question was first raised is an ignorance of the meaning of the question in its actual form.

One result of the elimination of time from the problematic is the tendency to reduce study to schematic verbalism and memorization. The real phenomenon as it stands vitally before our gaze is overlooked and in its place an older verbal formula for it is substituted. The teacher unconsciously begins to think that all questions were discovered and solved in the past. In consequence he conceives his true work to be the pulling together of the answers of our forefathers and arranging them in a logical synthesis. This synthesis is then the everlasting truth. All modern questions are resolved by referring them to this scheme and they are answered by deducing corollaries from yesterday's synthetic depositum. The present problem need not be examined in itself. It need only be reduced quickly to a category in the timeless frame, and by that very tactic the problem is solved.

We can see the effects of this attitude in some of our students. A glaring instance presented itself to me recently. A Jesuit group was discussing the thought of a contemporary thinker and a student was taking part in it. He did not know anything about the man under discussion but he wanted to know and he listened carefully. At a given point the student said: "Oh, I see now; he's an idealist!" With this remark the young man became perfectly happy. The discomfort of his previous ignorance had vanished. The need to do something about it disappeared. He no longer felt the obligation to undertake the laborious investigation into the novel work of a contemporary. He had him neatly boxed in a category which had its unshakeable place in a verbal scheme whereby all truth—present, past and future—was frozen timelessly. Idealism is a word of rejection in this young man's lexicon, and the thinker of our day was at once annihilated by labeling him with this bad word. All curiosity for what the scholar had so laboriously seen and with puzzling originality explained was gone. There was nothing to be learned from him because his living ideas were replaced by a dead verbal formula for a bad thing, defined as such by the scheme itself.

On my return to Woodstock I shall become painfully aware of another consequence of schematized verbalism. In the theologate we are entering into the period of repetitions. A feverish tension will fall on the whole community. Some of the students normally manifest languor rather than

tension, but now they will become tense. Why? They are learning by heart definitions and proofs. Memorization is always a drudgery. The drudgery becomes distressing when it is overloaded with urgency, and repetition time is a time of urgency, for it means that examinations are around the corner.

What is the student memorizing? Definitions and proofs. Yet neither of these is really a task for memorization. By a definition a man explains what he means by a term he uses to express his thought. It is something which needs a bit of reflection on a man's own thought, provided that the thought be there. What is a proof? The reason why a man adheres to a certain proposition. No one knows better than the man himself his reason for his judgment. But in the examination the last thing that many a student wants to do is explain what he means by the term. Sometimes it represents no thought of his at all. Nor does the candidate wish to give the reason why he holds a given proposition. He actually may have no other reason than that he feels obliged to cling to the thesis.

Instead of giving his own definition which he considers irrelevant to the dialogue, he wants to give the verbal formula included in the scheme proposed to him. That needs memorization. Instead of giving his own reason for his adherence to the proposition, he wants only to give the reason proposed by the scheme. That also needs memorization. In many a student's mind the examination is nothing but a test of memory. If the examiner tries to find out what the examinee himself thinks about the matter under discussion, the question is frequently dismissed indignantly as unfair, irrelevant and illegitimate. The examinee is not there to tell the board what he thinks. He must only respect what the scheme says. Good repetition is considered the goal of study. He thinks that a mark of excellence in study is given to a student not because he understands the reality he is talking about but because he has adequately memorized the scheme and in addition understands its logic. Acquaintance with the thing itself seems unimportant.

All this is verbalism, logicism, schematism and memorization. A Jesuit who has allowed himself to become a victim of such a process will enter into the discipline he is to teach in our colleges with a tendency to do the same thing to his new science. As a result he will not approach personally the phenomenon he is supposed to deal with but rather propose someone else's scheme for it. The teacher is ceasing to be an individual person. All that is personal in his work is the simplification and clarification of a scheme which is not his own. Even though lucidity is neither proof nor refutation of a position, for some men simplicity and clarity are the only aims of good teaching. These they try to achieve and not a few achieve them admirably.

Yet even these minor personal contributions of the teacher still leave him de-personalized. It is not the living Jesuit who is teaching but rather a composite abstraction. But the living Jesuit should be the heart of our education. He, this individual man, with all the singularity of his existence, is the Jesuit we want in the classroom. His personal conquest of the truth of the discipline gives him the right to teach and when he does so he gives himself. Pure truth is either a Platonic ideal or God. Truth in human terms is humanized truth, the personalization of truth as it came to concrete man. The teacher's function is to point effectively to truth, but he can only do so to the degree he himself has seen it. In showing the place where truth can be met, he also shows us where he stands.

The burden of this discourse is that Jesuit education is the means for putting a Jesuit in close contact with students. This contact will give the Jesuit an opportunity to communicate Christ to certain men and women whom the Jesuit especially wants to reach. However, the means has its own essence and its own morality. Education on the college level is the formation of a young adult in scholarship through association and collaboration with creative scholars. If then the Jesuit is to establish his contact with college students, he must be a creative scholar. In consequence, he personally and individually must struggle with truth itself. He cannot let this task fall on others, certainly not on those of the past. In the very best sense of the word he must be ever a researcher. A purveyor of ready-made schemes concocted before our time is not a researcher. He is not a scholar because the scholar must personally battle with the truth in his own life and time.

The classroom is not the locus for direct apostolate, the effort to persuade men to know and love Christ. It only establishes contact with the student. The apostolate will be exercised outside the framework of strict academic action. The correct and effective use of teaching as a means for apostolic action requires the possession of disciplined learning because that necessarily impresses the student favorably, winning him over to the teacher's influence. The effective apostolate of the Jesuit teacher, therefore, requires as an indispensable condition the highest degree of true scholarship. True scholarship is a zealous, personal, individual wrestling with the truth as it appears in human existence.

The conclusion of our reflections seems to be that Jesuit education to be truly such requires from the individual Jesuit the most industrious exercise of original effort in the scholarly discovery and assimilation of truth. Only in this way can the Jesuit be the heart of Jesuit education, and that is what he is meant to be.

Report of the President

Edward B. Rooney, S.J.*

Just 19 years ago this week the Jesuit Educational Association held its last meeting at Marquette University. At that meeting there were 114 Jesuits, 105 priests and 9 scholastics present. Father Raphael McCarthy was then Rector of Marquette and welcomed the Jesuit Educational Association to Milwaukee. One of the main topics discussed at the first, a general meeting, was "The N.C.E.A. and Accreditation." At the meeting of college and university delegates Father George Bull of Fordham University read a paper on "Anti-Intellectualism, Utilitarianism and Vocationalism in our Colleges." At the meeting of high school delegates Father Martin Scott lead a discussion on Fourth Year High School Religion. And at the dinner meeting at the Milwaukee Athletic Club, Father William McGucken and Father Allan Farrell conducted a round-table discussion on "The Ratio Studiorum and Its Place in Jesuit High Schools and Colleges Today."

These papers and discussions created such interest among the Jesuits that on a motion made by Father Thomas Bowdern, of Creighton University, seconded by Father Thomas Egan of Loyola University, Chicago, it was decided that the papers read at the meeting should be printed and made available to all. In fact it was suggested that Father George Bull's paper be read in all our refectories.

This was all 19 years ago; and yet discussions at Marquette in 1938 would not be entirely out of place today. The suggestion that the papers read at the 1938 meeting be made available was put into effect—and actually they were made available in the first issue of *The Jesuit Educational Quarterly*.

It is pleasant to be back in Marquette again and to recall the early beginnings of the Jesuit Educational Association. Let us not forget during this meeting to give a remembrance in our Masses and prayers to the 25 of the 114 Jesuits who attended the 1938 meeting and who have since gone home to God, to receive the reward of their labors in behalf of Jesuit Education in the United States.

It would be interesting indeed to linger on the history of the achievements and the growth of Jesuit Education in the United States during the past twenty years, but such a pleasure task must wait for more

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* Report given at the General Meeting of All Delegates, Annual Meeting of the Jesuit Educational Association, Marquette University, April 21, 1957.

leisurely composition. The facts of our growth are known to all of us; indeed they are pressing upon us. Perhaps therefore, the time alloted to my report can be put to the best use by devoting it to a brief account of some activities going on in the educational world which may have considerable bearing on the solution of present day problems confronting Jesuit Education in the United States.

A glance at the program of the sectional meetings of the Jesuit Educational Association to be held here tomorrow will give an indication of some of the serious problems that confront our universities, colleges and secondary schools. As I look at the program and at the names of the persons who are to read papers and lead discussions, I feel certain that the discussion of these problems is in good hands. If we fail to reach solutions it will not be because the problems have not been clearly presented. Our failures, as Father George Bull once said, will be ones of execution and not of principle.

Here then are some of the items that I thought might be of special interest to the delegates to the 1957 Jesuit Educational Association meeting. Some of them concern our Jesuit schools particularly, others have to do with the legislative scene, ,and still others refer to the broader field of American education.

Latin Requirement in the A.B.: Many here present will recall that at the Institute for Deans, held at Santa Clara in August 1955, a resolution was passed asking that the requirements for the A.B. degree, and specifically the Latin Requirement, be allowed to be determined on a province basis. The Executive Committee of the Jesuit Educational Association has given much time to a study of this recommendation of the Santa Clara Deans' Institute. After due consideration the Executive Committee reworded the proposal in a more positive form and then presented it to the Board of Governors. The Board of Governors in turn felt that before it made a final decision in the matter certain studies, some factual some theoretic, should be made. Sub-Committees of the Executive Committee, with the assistance of a large number of teachers and administrators throughout the country, have cooperated in making those studies. A complete report on the studies will be presented to the Board of Governors at its meeting in Chicago early in May.

Manual for Jesuit High School Administrators: Father Lorenzo K. Reed has just completed the revision of the Jesuit Educational Association Manual for Jesuit High School Administrators. The revised edition of the Manual is now being distributed by high-school Province Prefects.

Members of the Jesuit Educational Association will be interested to know that the first edition of the Manual for Jesuit High School Administrators proved popular all over the world. The Central Office has

received many orders for it from Canada, India, Ceylon, Japan, Australia, Ireland, Spain, etc. We are sure the second edition which is much more complete then the first will be even more popular.

While it is true that much of what is in the Manual will be the concern chiefly of high-school administrators there is so much in it on supervision and on teaching that the Executive Committee of the Jesuit Educational Association has decided to make these sections available as a separate publication for teachers. This separate volume for teachers will be ready for distribution by Province Prefects early in June.

I am certain that this Manual will continue to contribute much to unity and cooperation among our schools in the United States. While the Manual is a production of a Sub-Committee of the Jesuit Educational Association Executive Committee, this Sub-Committee would wish me to express a special word of appreciation to Father Lorenzo K. Reed, Province Prefect of the High Schools of the New York Province; for on his shoulders fell the brunt both of the original and of the revised edition of the Manual. In fact they would say that the Manual is Father Reed's. Our deep appreciation to him for a splendid achievement.

Eucharistic Fast: It has been suggested that with the change in the law regarding the Eucharistic Fast our institutions may wish to give consideration to the advisability of having a noon-day Mass, and where possible even an afternoon Mass, so as to make it possible for still more students to receive Holy Communion daily. Administrators may wish to discuss such a possibility with student counsellors and spiritual directors. As priests we realize that an increase in devotion to the Mass and to the Blessed Sacrament will tend to heighten the Catholic atmosphere of our schools, and this, in turn, will have a marked influence on the future lives of our students. We may also confidently hope that an increase in frequent communion will have as one of its effects an increase in vocations to the priesthood and religious life.

Legislation—

Loans for College Housing: There is a strong movement in Washington, lead by the President and the Treasury Department, to raise the interest rate on loans. On March 25, 1957, representatives of five national educational associations with headquarters in Washington appeared before the Sub-Committee on Housing, of the Senate Committee on Banking and Currency, and protested against the raising of the interest rate.

On more than one occasion I have suggested that if you are interested in maintaining the present favorable interest rate on college housing loans it would be well to make your wishes known to your Congressman.

The A.C.E. Bulletin, *Higher Education and National Affairs,* for April 1, 1957, gives a list of the membership of the Senate and House Banking and Currency Committees. These are the Committees that are considering legislation to change the interest rate. While it is well to make your wishes known to them, it might be well also to make your views known to your home Congressmen as well. It is important to note that this is a loan program, is self-liquidating and is not a gift.

The April 12th issue of the A.C.E. Bulletin, *Higher Education and National Affairs,* contains the news that the House Committee on Banking and Currency has approved a draft of the Housing Act of 1957 and that a bill, HR6659, embodying it, was introduced on April 8th. This proposed Act contains a new formula for determining the interest on loans for college housing. The result of the new formula will be to raise the interest rate to 3½ percent on such loans applied for after March 15th.

The same bill would raise the total amount available for college housing loans from 750 to 900 million. The bill would also make loans available to hospitals operating nursing schools or internships.

A compromise on the interest rate may still be possible if enough opposition to the proposed new formula for determining the interest rate can be mustered.

Federal Assistance for R.O.T.C. Facilities: While there has been considerable sentiment in favor of legislation for partial payment by the government for construction of R.O.T.C. facilities there is a feeling among many that such proposed legislation will be among the first casualties of the economy drive in Congress.

Federal Aid for School Construction: The open opposition of the N.A.M. to federal aid for school construction as well as many articles in newspapers and many inserts placed in the Appendix to the Congressional Record leads one to believe that the opposition to federal aid for school construction may be strong enough to kill the legislation in this session of Congress.

Federal Scholarship Program: As may be seen from our summaries of educational bills introduced in this session of Congress there is marked support for some kind of a federal scholarship program. The opinion poll conducted by the American Council on Education on a federal scholarship program gives a clear indication of such support. Personally I doubt that a program of federal scholarships will be passed during this session of Congress.

On Federal Aid: I have been asked by several persons to state my personal opinion on federal aid to education in general and on some of the specific measures now before Congress. I am glad to do so. But may I say, first of all, that since I realize that the question of federal aid to

education is one on which there are divergent opinions among educators, including Catholics, I have sedulously avoided stating my opinions in such a way as to commit our schools or the Jesuit Educational Association to a set position. My own opinion comes to this:

1) I am opposed to federal control of education.

2) I do not believe that federal aid to education necessarily involves federal control. However, while not impossible, it will be very difficult in any program of direct assistance to education to avoid federal control. Indirect assistance, e.g., to students with "cost of education" grants to schools, would be less open to the danger of federal control.

3) I believe that the federal government has an obligation to subsidize education only when there is question of programs conducted specifically in the interest of the federal government, or when states or municipalities can no longer provide for the educational needs of citizens.

If there should be a program of federal aid to schools, I see no sound reason why it should be limited to publicly supported schools. To do so would put the federal government in the position of identifying American education with public education. The fact is that American education is both public and private.

For the time being I am opposed to federal aid for school construction, for federal scholarship programs, and for federal programs of general extension work. The reason for my opposition is that I am not convinced that there is need for the federal government to step in here. In other words, I am not convinced that these needs cannot be met by the states, municipalities, private programs, and by the families of students.

Expansion: While the great increases in enrollment owing to the increased birthrate in the United States have just about started to affect enrollment in higher education institutions, there is no doubt that much higher enrollments are in the offing. It is pleasing to note in an increasing number of references to future high enrollments that the place of the private institution in meeting educational needs is recognized and that the facilities of private education are counted on to absorb a certain percentage of the increased enrollments.

A report on a study of the plans of liberal arts colleges for expansion conducted by the Association of American Colleges is given in the March 1957 *Information Bulletin,* issued by the Council for Financial Aid to Education. Institutions were asked about these plans for expansion, on the basis of two hypotheses.

The first hypothesis was that present endowment and capital equipment would *not* be increased or would be increased in a manner definitely foreseeable at the time of answering the question.

On the basis of this hypothesis the following groups of institutions

would be prepared to expand their enrollments (beyond the figures of 1955–1956) by the following percentages:

	PERCENTAGE OF EXPANSION BY	
	1960	*1970*
1. Church Related, Non-Catholic Colleges	19	43
2. Church Related, Non-Catholic Universities	18	20
3. Catholic Colleges	27	56
4. Catholic Universities	26	78
5. Independent Colleges	19	34
6. Independent Universities	11	25
7. All Private Institutions	19	42

The second hypothesis was that capital resources would be increased to an extent necessary to correspond to educational policy. On this hypothesis here is the way the group would be prepared to expand:

	PERCENTAGE OF EXPANSION BY	
	1960	*1970*
1. Church Related, Non-Catholic Colleges	37	73
2. Church Related, Non-Catholic Universities	36	77
3. Catholic Colleges	49	93
4. Catholic Universities	43	123
5. Independent Colleges	32	66
6. Independent Universities	17	46
7. All Private Institutions	35	73

While I am inclined to believe that some of these figures are over-optimistic it is clear that private colleges are ready and willing to absorb a good part of the expanding enrollments for the next 15 years.

Just what role Jesuit educational institutions both secondary and higher will be called upon to play in meeting the educational needs created by expanding enrollments will, to a considerable degree, depend on local and province conditions and plans. I hope that Father General may soon be pleased to issue some norms to guide us in the matter of expanding present educational facilities. In the meantime, however, and without wishing to anticipate the exact content of any norms issued by Father General, it seems to me that we could be on safe ground if we were guided by the following ideas:

1. Since we have assumed a large share of the burden of education, particularly higher education, we are committed to the work of education in the United States.

2. We must be mindful of the present and future needs of the Church

in the matter of education and must be willing to shoulder part of the burden created by the growing needs of education. We may not, therefore, simply wash our hands of the need for expansion and declare that we are already doing more than our share.

3. Hence we must be willing to expand in such a way as to bear a fair share of the growing needs of Catholic education. We must not expand to the extent that we jeopardize our own ideal of education.

4. We should, therefore, be willing to expand to the extent that we can continue to give the kind of an education we desire to give, and for which we are best fitted.

5. This means that we should be willing to expand to the extent that we have or can secure, the financial, physical, and manpower facilities necessary to give to as large a number of competent students as possible, the kind of an education we wish to give.

6. This means that we shall have to develop and perfect a process of selection whereby we can identify and select the really competent student. This selective process will, by eliminating the incompetent, make room for more competent students.

7. This means that we shall have to increase our financial resources by every reasonable means.

8. This means that we shall have to recruit and retain by adequate salaries and an attractive academic climate, a staff of highly-competent laymen to assist us.

9. It also means that we must recruit and train a sufficient number of Jesuits to maintain the Jesuit tradition, character, and atmosphere of our institutions.

As I said above, I feel that if our plans for expansion are guided along these lines, we will both remain true to the traditions of Jesuit education and assist the Church in meeting her growing educational needs.

Whether or not the needs of Catholic education might mean that we should begin to think in terms of opening junior colleges or community colleges I am not prepared to say. I think that it will mean just that for the Church and Catholic education in general. But I am not prepared to say that the Society would be in a position to take on any sizeable portion of such a burden. It is possible that some of our high schools might have to expand into the junior-college field.

If the figures given earlier in this report on the willingness to expand to meet enrollment increases are only half-correct it is obvious that much sound, long-range planning to meet physical, financial, and manpower needs is in order. It is just as clear to me that if such planning is to be sound it cannot be based on local circumstances alone, but must also be on a province basis. In fact, only if they are on a province basis can our

long-range plans, particularly as they regard Jesuit manpower, be sound.

Paying the Cost: Closely bound up with this question of expansion is the question of finances. In his mid-year commencement address, Father Paul Reinert examined this problem and came up with a "new look." As he is reported in the April 16th issue of *America,* Father Reinert thinks that the way out of the financial predicament of private institutions is to raise faculty salaries 50 to 100 percent; in order to meet this cost, raise tuition correspondingly; for those who cannot pay now, provide a system of paying later.

I am sure we will hear more—both for and against—Father Reinert's proposals during the Jesuit Educational Association and National Catholic Educational Association meetings. It is interesting to note in this connection that both Massachusetts and New York recently gave the green light to the establishment of private finance agencies to provide a low-cut loan system for students to meet educational expenses.

And speaking of paying the cost, surely special mention should again be made of the unusual aid extended to private colleges and universities in raising faculty salaries by the Ford Foundation grants. If they will examine again the total amounts they have received from the Ford Foundation, many of our institutions may find that their largest benefactor is—the Ford Foundation.

Since I have heard nothing to the contrary I presume that the Ford Grants have been forwarded to the schools according to schedule. There was question of a readjustment of the amount of the grant in a few instances.

Again helping to pay the cost, on March 28th the Ford Foundation announced the completion of the grants to medical schools. The total grants ranged from $600,000 to $3,600,000. Top awards were made to Yale, Harvard, Johns Hopkins, Columbia, Cornell and Chicago. The awards in the case of Jesuit medical schools range from $1,400,000 to $2,000,000. A total of $8,000,000 was received by the five Jesuit Medical Schools.

Scholarships and Fellowships —

National Science Foundation Fellowships: On March 15th the National Science Foundation published a list of its fellowship awards and honorable mentions. According to a summary prepared by Father Allan P. Farrell, of the University of Detroit, of the 845 pre-doctoral fellowship awards, 19 went to twelve Catholic colleges and universities. Of these 19, eight awards went to 7 Jesuit schools.

One hundred forty-two candidates in fifty Catholic colleges and universities received honorable mention, and of these, fifty were in Jesuit

institutions. Among the Catholic institutions the University of Notre Dame was first with 7 fellowships and 22 honorable mentions.

Recently the Oak Ridge Institute of Nuclear Studies announced the award of 117 special fellowships in Nuclear Energy Technology for the academic year 1957–1958. A quick examination of the list indicated that four of these awards went to students at Jesuit institutions.

Merit Scholarships: As we mentioned in Jesuit Educational Association *Special Bulletin*, No. 217, February 1, 1957, students from Catholic High Schools made a good showing among the finalists in the National Merit Scholarship examinations. Our own Jesuit schools did particularly well; but as usual we will not be satisfied until they do much better since we all feel that they are able to do better. There were 7,289 finalists. Of the 700 finalists (or 9.5%) from Catholic high schools 165 (or 23.6%) were from Jesuit schools. As yet I have not seen the list of those who actually received Merit Scholarships.

In looking for "competent" students college deans should not fail to examine the complete list of Merit Scholarship finalists.

The Woodrow Wilson Fellowship Program: On April 4, 1957, the Ford Foundation announced a grant of $25,000,000 for the extension and development of the National Woodrow Wilson Fellowship Program. The purpose of this grant is to increase the number of persons going into college teaching. The grant will make it possible to provide graduate fellowships at the rate of a thousand a year for the next five years. Individual awards are expected to average $2,200. Of the total appropriated, $200,000 will be made available to the Association of American Universities and the Association of Graduate Schools to provide for an immediate increase of 100 Woodrow Wilson Fellowships for the Fall of 1957. Nominations for Woodrow Wilson Fellowships will be made by the local faculty members and selection will be made by regional committees and a national committee made up of university and college faculty members. Fellowship recipients may attend the institution of their choice. Further information on the fellowships may be secured by writing to the Ford Foundation, 477 Madison Avenue, New York.

National Advertising Campaign: As has been mentioned several times in Jesuit Educational Association *Special Bulletins,* the Advertising Council's Campaign on behalf of higher education was scheduled to get under way during April. Early in March, kits were sent to all colleges, containing reproductions of all the ads currently prepared with a description of the media for which they are intended. As the Council for Financial Aid to Education which is sponsoring the campaign has emphasized, the Advertising Council merely makes materials available to advertisers and the various media of advertising. The extent to which

these are used depends entirely on the willingness of publishers and radio and T.V. executives to donate space and time, and to the readiness of business and industry to sponsor the material. As the Advertising Council has also insisted, it is the duty of the individual college to make the best of the Advertising Council's campaign by meshing their own campaigns with it. It is expected that there will be two peak periods, one in the spring and another in the fall..

Alumni Work: In the January 1957 issue of the *Jesuit Educational Quarterly,* I gave a report on the Loyola Congress of Jesuit Alumni, held at Loyola, Spain, last July. In the report was the news that the Loyola Congress had voted to establish a World Union of Jesuit Alumni. Inspiration for the establishment of such a World Union had come from the Holy Father, Pius XII, and from Very Reverend Father General.

Once the decision was made to establish a World Union of Jesuit Alumni, an organizing Committee was appointed consisting of the Count de Trigona, head of the Spanish Alumni Association, and representatives of the European Alumni and of the Inter-American Alumni Association to take care of the beginnings of the organization. On October 16, 1957, Father General appointed the Reverend Juan Pastor, Advisor to the Organizing Committee.

Participation in all such international groups is generally on a national basis. This presents a difficulty for American Jesuit Alumni organizations, since up to the present, we have had no national organization. The closest thing we have to it is the Conference of Jesuit Alumni Officials, which was organized three years ago.

Since it is obviously the wish of the Holy Father and Very Reverend Father General that we participate in the World Union of Jesuit Alumni, we shall have to develop ways and means of participation. I propose to discuss this matter with the Provincials at their next meeting. No doubt it will also be discussed at the next meeting of the Conference of Jesuit Alumni Administrators which is scheduled to be held in Santa Monica, California, just before the Annual Meeting of the American Alumni Council at Pasadena. And may I express the earnest hope that at least all our college and university Alumni Associations will be represented at the meeting of the Conference of Jesuit Alumni Administrators.

Accrediting: The National Commission on Accrediting has announced that an agreement has been reached between it and the American Association of University Women. In general the tenor of the agreement is that the A.A.U.W. will accept approval by a regional accrediting agency for any institution seeking approval by it. In determining whether the baccalaureate degree requirements meet the academic content standards of the A.A.U.W., the association will rely on the institution's own

analysis. However, with respect to provisions for women students and professional opportunities for women in faculty administration, the A.A.U.W. will make its own study and analysis.

As stated in the last *Special Bulletin,* No. 214, it appears that the National Commission on Accrediting, as well as more of the regional accrediting associations, now feel that the National Council for Accreditation of Teacher Education has met the stipulations of the organizations and they have consequently withdrawn their opposition to it. While I am still not too happy about certain features of N.C.A.T.E., schools so desiring should feel free to seek accreditation by it.

Academic Freedom: At the annual meeting of the Association of American Colleges, Dr. Samuel B. Gould reported for the A.A.C. Committee on Academic Freedom and Tenure that the major work of the Commission for the past year was the development, by means of a joint committee of the Commission and of the American Association of University Professors, of procedural standards in faculty dismissal proceedings. The statement on dismissal proceeding is to be circulated among the membership of both associations during the current year and will be voted on at the January 1958 meeting of the A.A.C.

Since it is very likely that any agreement reached in this matter by these groups will hold for several years, it is of the utmost importance that the report be given serious consideration and that it be discussed by faculty and administrators alike. The procedural recommendations are to be found on page 145 of the March 1957 issue of *Association of American Colleges Bulletin.*

These then are some of the matters that I have thought well to report at this annual meeting of the Jesuit Educational Association. I hope they will be of some assistance in aiding administrators to meet some of their problems.

May I take this occasion to thank our individual schools and the administrators of all them for the hearty and cordial cooperation that the Central Office of the Jesuit Educational Association has always received from them. It is my fond hope that the Central Office is of some assistance to member institutions. We wish you to know that it is always a pleasure to work with fellow Jesuits and to be of service to our schools.

A Modern High-School Mathematics Program

JOHN W. SULLIVAN, S.J.*

You are all aware, I assume, that something is astir in the field of high-school mathematics—indeed, something big—but the press of administrative duties has perhaps kept you from making an inquiry into the nature of this movement or into the positive steps that can and ought to be taken to meet the implicit challenge. In an attempt to crystallize for you the current thought on this important topic, I have grouped my subject matter under three main headings: 1) the state of affairs that has precipitated the movement; 2) the concrete manifestations of the movement; and 3) a critique.

What, then, is this move to modify the high-school mathematics program? Simply stated, it is a movement to overhaul the curriculum from top to bottom; its purpose is the "establishment of a truly modern curriculum in college-preparatory mathematics. . . ."[1] On the present state of high-school mathematics, the statement of the College Board Commission on Mathematics has this to say: "The present curriculum in high-school mathematics was largely developed 50 to 75 years ago as a college preparatory course. The only major new idea that has entered the curriculum since that time is the development of 'General Mathematics' courses for the non-college student. Although the former curriculum was well designed for the needs of its day, it has become progressively out of touch with the advances and needs of modern science and technology. The twentieth century is the golden age of mathematics and science, and the leading mathematicians have been so busy with the development of their subject that they have neglected to keep the teachers of mathematics informed about these new ideas. Neither the research workers nor the teachers should be blamed for this 'cultural lag,' but the gap is now so serious that it must not be ignored."[2]

In short, then, the present day mathematics curriculum is out of date. In order to receive the full impact of this accusation leveled at today's

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* Presented at the Meeting of Secondary School Delegates, Annual Meeting of the Jesuit Educational Association, Marquette University, April 22, 1957.

[1] *Objectives of the Commission on Mathematics of the College Entrance Examination Board* (mimeographed). New York: College Entrance Examination Board, 1956, p. 1.

[2] *Ibid.*, p. 4.

high-school mathematics, we should have at least a nodding acquaintance with the spirit, if not the content, of modern mathematics. Further, this will help us to appreciate in better fashion the term "modern mathematics" that is used so often in what is to follow.

It would be both futile and presumptuous of me to attempt more than the briefest glance at the vast structure that is modern mathematics, for the field is incredibly large and complex. However, I have singled out two facets of the subject that I think will admirably suit our purpose, namely: 1) the establishment—or reestablishment, if you will—of the logical foundations of mathematics, with the resultant emphasis on the postulational-deductive approach to the subject; and 2) the tendency to abstractness, resulting in turn on a closer bond and cohesion between the myriad branches of mathematics.

Most of us here today can recall, from our high-school algebra days, an assumption that underlay all our work in this subject. This assumption is that, for all a and b, $ab = ba$—technically known as the Commutative Principle of Multiplication. Further, we may also recall, from our Euclidean geometry course, another assumption—namely, that through a point outside a line, one and only one line can be passed parallel to the given line, the so-called Parallel Postulate of Euclid. It may come as a complete and even somewhat disconcerting surprise to learn that these are no more than just assumptions, and that perfectly consistent, coherent, and eminently usable algebras and geometries have been built up on the rejection of the Commutative Principle of Multiplication and of the Parallel Postulate, respectively. If we are even mildly surprised, imagine the astonishment and, perhaps, initial dismay of contemporary mathematicians when Hamilton first rejected the Commutative Principle to clear the path for his new discovery, quaternions. Their consternation quickly gave way to creative exploration and a host of new algebras sprang up by rejecting or modifying one or more of the hitherto commonly accepted postulates of classical algebra. The resultant upheaval was matched, possibly, only by that occasioned by Lobachewsky's and Bolyai's bold rejections of Euclid's Parallel Postulate. By so doing, they erected the remarkable edifices of the first non-Euclidean geometries. They were quickly followed by Riemann and others who substituted their own axioms in place of the Parallel Postulate. Though these revolutionary changes were to alter and enlarge the structure of mathematics in undreamed-of fashion, it drove some men to a reexamination of the fundamentals. Their work continued through the latter half of the nineteenth century. In 1899, David Hilbert synthesized the logical analysis that had gone on before him in a brilliant and classic discussion of the foundations of geometry. Because of Hilbert's tremendous influence—he

was undoubtedly the greatest mathematician of his day—the postulational method became firmly entrenched not only for geometry but for nearly all of mathematics—arithmetic, algebra, topology, etc.—and this approach is what makes mathematics the precision tool it is today.

The tendency to abstractness, so all-pervasive of modern mathematics, had its origins in the papers of a brilliant young Frenchman, Evariste Galois, who was killed in a duel at the age of 21 in the year 1832. These papers contained the theory of groups, "[a] unifying principle," writes Dr. Dirk Struik of the Massachusetts Institute of Technology, "[that] has been recognized as one of the outstanding achievements of Nineteenth-Century mathematics."[3]

"In a little more than a century, [the group concept] has effected a remarkable unification of mathematics, revealing connections between parts of algebra and geometry that were long considered distinct and unrelated. 'Wherever groups disclosed themselves, or could be introduced, simplicity crystallized out of comparative chaos.' Group theory has also helped physicists penetrate to the basic structure of the phenomenal world, to catch glimpses of innermost pattern and relationship."[4] So writes James Newman in his four-volume anthology, "The World of Mathematics."

Very simply, a group is an aggregate or class or set of undefined elements—they may be numbers or geometric entities or atoms, etc.—together with an undefined operation that pairs any two elements of the set, and this operation may be addition or multiplication or rotation or projection or the like. There are four axioms that govern the manipulation of the elements of a group—and that is it! Obviously, this is about as abstract a mathematical system as may be arrived at, but, just as obviously, precisely because of this abstractness the theorems deducible from its postulates have as many applications as there are possibilities of making concrete substitutions for the undefined elements and the undefined operation. Our old friends from Minor Logic days, comprehension and extension, are back under a slightly altered guise.

It is difficult to appreciate the fact that such a simple concept gave rise to the imposing theory of groups which is the key to all of modern algebra and modern geometry; that it transcends the vast sweep of modern mathematics and welds it together into an integrated whole; that it played an important role in the development of theories that were indispensable tools of modern scientists—more specifically, theories that led to Einstein's Theory of General Relativity.

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[3] Dirk J. Struik, *A Concise History of Mathematics*. New York: Dover Publications, 1948, p. 225.

[4] James R. Newman (ed.), *The World of Mathematics*. New York: Simon and Schuster, 1956, Vol. III, p. 1534.

What conclusions can we draw from the foregoing? They are: 1) that there are at hand today as never before the means to present mathematics to our students as a logically constructed, intellectually satisfying and meaningful subject; 2) that the postulational and abstract approaches give a keener insight into and better comprehension of the subject—not, it should be added, into isolated and fragmentary areas of the subject, but into patterns that underlie many seemingly diverse fields; 3) that the resultant new advances in mathematics have rendered many areas obsolete.

In the light of these conclusions, it is rather disheartening to look at the state of affairs in our high schools today. The bald fact is that modern mathematics has had no impact on our high-school presentation of mathematics. "How have these extraordinary changes in the nature and structure of mathematics been reflected in the secondary curriculum?" asks Professor E. P. Northrop of the college of the University of Chicago. "It is hard," he answers, "to find even a trace of a reflection."[5] In a paper entitled: "The Impact of Modern Mathematics on Secondary Schools," published in the Bulletin of the National Association of Secondary School Principals of May, 1954, Professor Saunders MacLane of the University of Chicago starts off with the sentence: "My subject is vacuous."[6] He goes on to remark that this is so because there has been absolutely no exchange of ideas between mathematicians and teachers of mathematics. The former have been single-minded in their pursuit of new ideas, while the teachers have concentrated on the reformation and presentation of old ideas. In paradoxical summary, Professor MacLane states that this is "no one's fault and everyone's negligence."[7]

Taking a closer look at the present high-school mathematics curriculum, we see that mathematics is still "presented as a series of isolated tricks so that students get no view of the subject as a whole. . . ."[8] The basic concepts, the fundamental ideas that unify and clarify large segments of traditional algebra, geometry, trigonometry and their more modern related outgrowths are completely ignored. This is wasteful of time and energy but, much worse, it perpetuates our students in their dislike for and disinterest in mathematics. If they find mathematics dull and uninteresting, it is surely not the fault of the subject. It is because

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[5] E. P. Northrop, "Modern Mathematics and the Secondary School Curriculum," *The Mathematics Teacher,* Vol. XLVIII, No. 6 (October 1955), p. 389.

[6] Saunders MacLane, "The Impact of Modern Mathematics on Secondary Schools," *Bulletin* of the National Association of Secondary School Principals, Vol. XXXVIII (May 1954), p. 66.

[7] *Ibid.,* p. 67.

[8] *Objectives of the Commission on Mathematics of the College Entrance Examination Board,* p. 5.

they see the subject as a jumble of unconnected, unrooted and therefore meaningless manipulations.

The uninitiate in high-school mathematics is started off in his first year algebra course with only a vague and confused understanding of fundamental concepts. He is taken through a bewildering maze of adding, multiplying and dividing polynomials; of factoring; of combining fractions; of systems of equations—and never are the basic principles that would show this seemingly amorphous mass to be a well-constructed, logically progressive and organic whole even alluded to, much less utilized. Rule is piled on needless rule whereas the student could, with present-day tools, be taught to detect the thread that runs through so very much of what he learns. He finishes his geometry course with the conviction that this is an area completely unrelated to the rest of mathematics. Further, he feels that deductive reasoning and mathematical proof have their proper place only in connection with geometrical theorems. In intermediate and advanced algebra and in trigonometry courses, a great deal of time is given over to long and tedious computations with logarithms; with extensive solutions of triangles by means of trigonometric function tables; with outmoded and time-consuming methods for finding the roots of polynomials; with many other topics whose utility for applied science has long since passed. Emphasis in these subjects can be shifted to the right places and antiquated areas can be deleted to make way for modern subjects to bring them in line with modern technical advances. Lest it be thought, because of the last few statements, that undue prominence is given to the informative character of mathematics, to the neglect of the formative, let me be quick to add that the new approaches and the proposed new topics are considered to be better suited to the student's needs, not only because they are important in modern science, but because they are better adapted to the formation of correct intellectual procedures and inquiry.

In an effort to effect a long-needed reform, the College Entrance Examination Board set up a Commission on Mathematics early in 1956. The objectives of this Commission were published under date of July 1, 1956. These objectives aim toward the "establishment of a truly modern curriculum in college preparatory mathematics. . . . The Commission has undertaken this task in the belief that the proper mathematical instruction of high-school students is of the utmost importance in the scientific and technical education of our young people, and that the present curriculum is badly adapted to the actual needs of our students. Recent developments in mathematics itself, the importance of mathematics in general education, and the shifting needs of science and technology now require us to adopt new points of view toward many por-

tions of elementary mathematics and to replace certain topics, which once were of importance, with others which are now considered to be of even greater importance."[9]

After a critical survey of the high-school curriculum in general and, to some extent, in particular, the Commission goes on to give instances of new points of view; changes in emphasis in content of standard topics; the elimination of present topics; and the introduction of new topics. Among other things, it would drastically curtail the time devoted to the non-analytical aspects of trigonometry. It would completely eliminate the tabular use of logarithms, for, as a tool for computation, logarithms have been superseded by "efficient machines that are much more accurate and rapid."[10] The Commission "is strongly in favor of teaching the deductive method, but believes that it can be taught better in other ways than in solid geometry. . . . consequently, our present thinking is that solid geometry should be dropped as a course in itself. The valuable portions of it, however, should be included in other places."[11] The possible new topics to be introduced include the basic notion of sets, descriptive statistics, statistical inference, abstract algebra, symbolic logic, analytic geometry, and elementary calculus. The Commission ends its eight-page report with this very sound observation: "The Commission is aware of the fate of the reports of similar bodies in the past; they were highly praised, but made no significant impact upon the actual curriculum in the schools. In order to avoid such a fate for its present efforts, the Commission plans to prepare:

(1) Detailed outlines of its recommended courses;
(2) Complete presentation of all new material or major revisions of older material, and samples of new points of view in older material.

The Commission does not plan to prepare or publish any series of textbooks but will make its materials available to all authors who may wish to adopt its ideas in writing their own texts."[12]

Quite independently of the C.E.E.B. Commission, the Colleges of Education, Engineering and Liberal Arts and Sciences of the University of Illinois established a Committee on School Mathematics, to investigate the problems of high-school mathematics. Some of you may recall the write-up of this committee in *Time* magazine last July. The objectives of this committee are pretty much the same as those of the C.E.E.B. Com-

[9] *op. cit.*, p. 1.
[10] *Ibid.*, p. 6.
[11] *Ibid.*, pp. 6–7.
[12] *op. cit.*, pp. 7–8.

mission, though it has actually gone further in its revision of the high-school curriculum than the College Board Commission, I suspect, intends or perhaps even dares to go. The U.I.C.S.M. has already developed a FIRST COURSE, a SECOND COURSE and a THIRD COURSE for the first three years of high school, and a FOURTH COURSE will soon be ready. At present only the FIRST COURSE is available, though the SECOND and THIRD COURSES will be available this summer. The units that are sent out are so-called Teachers' Editions, for interleaved throughout the text are the interesting and highly valuable comments of the teachers and reactions of the students to the various phases of the course as presented. Materials for a class of students are supplied only to those schools participating in the Committee's program.

If one single trait, all-pervasive of the whole FIRST COURSE, had to be singled out, it would be the heavy emphasis placed on intuition and inductive reasoning. As each new area is explored, the matter is carefully presented in such a way that the student will arrive at the underlying principle before it is formulated for him. By that time it is "old hat" and is readily accepted. With regard to the formulated principles, they are worded with exquisite regard for accuracy and for the complete exclusion of all possible sources of confusion for the students. The notions so important to modern mathematics are brought in easily and naturally—set, partitioning, one-to-one correspondence, isomorphism, transformation, invariance. None of these words, as I recall, is used explicitly, but careful groundwork is laid for the later exploitation of the concepts. When a notion that is at present reserved to a later course can be brought in quite naturally, this is done. Thus inequalities, usually delayed until senior year, are introduced in the section on equations; probability, in the section on ordered pairs that leads up to graphs. All in all, the University of Illinois Committee has done and is doing an extremely creditable piece of work, if its FIRST COURSE is any criterion.

Besides the work of these two committees, numerous articles on ways and means to bring high-school mathematics up to date have appeared in the professional journals. These have been so numerous in the last few years that it would be hopeless to attempt even a partial catalogue of the titles. It might be mentioned, however, that the *Mathematics Teacher,* the monthly publication of the National Council of Teachers of Mathematics, has done an excellent job in keeping up with the trend, not only in publishing articles of its own, but in reprinting important articles from other journals and bulletins. Further, the same National Council has brought out a valuable source book in their Twenty-third Yearbook: "Insights into Modern Mathematics." This should be a vast help to teachers in service whose knowledge of modern mathematics is limited.

And now to anticipate some questions that I am sure this exposition has occasioned. First, wouldn't the new matter proposed be too difficult? Dr. Albert Meder, Jr., Dean of Administration at Rutgers University and Executive Secretary of the C.E.E.B. Commission on Mathematics, answers this difficulty quite adequately: " . . . many of the topics," he says, "that one would wish to see included in the school and college course are more elementary than certain things that are now being taught. In other words, the subject matter we are talking about is not difficult subject matter. It is not proposed that we leave out certain easy topics and replace them by more difficult topics. Indeed, it is not much of an exaggeration to say that it is proposed that certain rather intricate topics be omitted and replaced by much more elementary topics. These topics are and can be made challenging and rewarding to the student."[13]

The second question is: Will this "new look" improve the teaching of mathematics? I hope I don't sound cynical, for I don't mean to be, when I say that it certainly can't make it any worse. If it eliminates rote and discrete manipulations that are taught largely for their own sake, it will have eliminated most of the pitfalls that ensnare present-day students. Clearly those who are to teach this modified mathematics must be competent in the larger trends of modern mathematics, but this is perhaps one of the strongest points in favor of the present movement. It will lay forever at rest, I sincerely hope, the canard that "anyone can teach high-school mathematics." Anyone can teach manipulative skills, perhaps, but even this is highly debatable.

This leads to the next question: Are our high-school mathematics teachers ready to teach this new material? The answer is that they are not. However, all who recommend these new changes are well aware of this and have already taken or propose to take the necessary steps to remedy the situation.

Last May, the teacher training subcommittee of the C.E.E.B. Commission outlined:

(1) some techniques for the training of in-service teachers.

(2) some ideas relative to a suggested curriculum for teachers in training.

(3) the development of an annotated bibliography to accompany the Commission's final report; this bibliography serving to direct teachers towards mathematics underlying the group's recommendations.

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[13] Albert E. Meder, Jr., *Needed Improvements in Mathematical Education* (duplicated), p. 5.

The results of this meeting have not yet been published, but possibly they will be ready for the College Board-sponsored conferences that are due to be held late in 1957 in cities from East to West Coasts.

The U.I.C.S.M., besides furnishing annotated texts for teachers as mentioned before, hold teacher training conferences and have specially adapted courses of study for prospective teachers of their program at the University.

Of special interest are the National Science Foundation-sponsored institutes for teachers. The N.S.F. has made or will make grants to 4,600 mathematics and science teachers this summer and to 750 such teachers for the coming academic year. By far the larger number of grants is made to secondary school teachers. The terms of the N.S.F. grants are quite liberal, as may be ascertained from their circular of information.

The next question is: How would the graduates of these new programs fit into college courses? This is a thorny problem, for the colleges are going through the same upheaval as the high schools. They are in a somewhat better position at present for a definite start has been made and, further, many excellent texts incorporating the new ideas have already come out. However, very much remains to be done even on this level, and the integration of high-school and college courses is just one more problem that will have to be ironed out by the various committees.

Finally, what specific steps should we take right now to cope with the situation? First, our mathematics teachers should start in-service training in modern mathematics immediately. If, for one reason or another, they cannot obtain the N.S.F. grants, they should take part in the summer workshops that so many colleges now run. This perhaps gives rise to serious problems, for undoubtedly men are needed for summer retreats and for parish work and for our own summer schools and the like, but these problems ought to be met now lest a much more serious one arise in the near future. Secondly, the mathematics courses in our Juniorates and Philosophates should be modernized. After all, these are our Normal Schools and it's rather incongruous, to say the least, to expect our men to teach what they have not learned. Third, the heads of the mathematics departments in our high schools should assiduously follow every phase of the present movement and adapt the curriculum accordingly. A word of caution on this final point. There must not be any precipitate action, for texts adapted to high-school use are not yet available and, secondly, hasty action would lead to a superficiality that would do far more harm than good. However, unhurried and deliberate action is not synonomous with "no action." The change-over will be gradual and our action must match this change. But a change is definitely on the way, and it is essential that we be ready for it.

The Library on Our Campus

ANDREW L. BOUWHUIS, S.J.*

"He draws water with a sieve who tries to learn without a book" is the graphic medieval way of stressing the importance of books for learning. "A monastery without a library is like a fort without an armory," was a medieval slogan found over the door of a monastic library. Books were of maximum importance in the life of the monk and scholar. The Society was profiting from the acquired wisdom of Middle Ages when in the Constitutions, in the early editions of the *Ratio Studiorum,* in the letters of the Generals, in the statutes of the early colleges as we read them in Pachter, it ordained that the professors should have all the books that they needed for their work. That some individuals really made use of this direction to stock their rooms with books is testified to by St. Robert Bellarmine in his domestic exhortations. He had his work desk in the library. His words: "Certain people want a whole roomful of books on the pretense that they need them all urgently from day to day. But if that were true, our friends would never be able to eat a meal or have a half hour's sleep, since their books are so numerous that an entire day would hardly be sufficient for them to open their covers, much less read them."[1] Even after due allowance is made for rhetorical exaggeration, the Cardinal does establish this point, that the professors had an abundance of books.

The fundamental spirit of the early Society about books for the college is quite aptly illustrated by the statement attributed to St. Peter Canisius, "Better a college without a church of its own than a college without a library of its own."[2]

Our late Father General, the Very Reverend Wlodimir Ledochowski, summed up the general spirit of the Society with regard to books and libraries in his *Letter on the Choice of Ministries and Works, and the Preparation of Ours for Them:*

"10. I have said that more numerous or better aids to study must be provided, with a prudent understanding of requirements. Chief among these is *The Library,* for which a greater care must be shown than has hitherto been done almost universally in the Society. How much money

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* Presented at the Meeting of College and University Delegates, Annual Meeting of the Jesuit Educational Association, Marquette University, April 22, 1957.

[1] *Exhortationes Domesticae* (ed. 1899), pp. 96–97.

[2] James Brodrick, S.J., *Saint Peter Canisius, S.J., 1521–1597.* Baltimore: The Carroll Press, 1950, p. 186.

is often spent on things of little or no use! How often that famous saying of Father Ignatius Visconti, now inserted in the *Epitome,* is forgotten: 'Rectors ought never to think that the money of their colleges is ill spent in the buying of books.'

"How true did Father John Paul Oliva assert: 'Books are our treasure and our noble occupation' or as is read on the facade of a great library of a certain university: 'Nutrimentum animae!' Of such importance are libraries in the Society that even in the most turbulent times the Generals did not cease to be solicitous concerning them. I was greatly moved to see, for example, in certain bound manuscripts in our possession, entitled *Sylloge Ordinationum . . . Praepositorum Generalium,* an ordination of considerable length on this point, dated February 5, 1763, and sent by Father Laurence Ricci to all the provinces of the Polish Assistancy, at the very time when that great martyr of the Society, as he was called by Father Roothan, had already begun to ascend his Calvary. It is well known, too, how much care was exercised in buying and collecting books by Blessed Joseph Pignatelli, whom the reigning Pontiff (Pius XI) playfully called 'a great collector of books and a good name.'

"But a library needs a competent librarian, who should certainly be trained for an office of such importance. Let all Provincials have at heart, therefore, what some have already begun to provide; namely, that as soon as possible there be at least one librarian in each province trained in the best methods of library administration who will then be able to instruct and assist others. Moreover, let the Prefects of our larger libraries keep in touch with one another, for this helps greatly to promote the quality of our studies."[3]

In the American Assistancy, literally prodigious progress in library work has been made since that date. In a *Supplement to the Course of Studies of the Missouri Province, Report of the Committee on Libraries,* February, 1923, it was stated as a result of an inquiry made by questionnaire that there were no trained librarians in our schools at that time; the management of the library was incidental to the librarian's other work, which in some cases included twenty-five hours of teaching a week; revenues for the purchase of books and periodicals were not well established; nor was there evident any great concern for the welfare of the library; seldom was there provision for any instruction in the use of the library. The earnest recommendation of the committee that trained full-time librarians be secured has been followed, and with the good results that were expected. No other province-wide survey of libraries of that date

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[3] Epistola de Ministeriorum atque Operum Delectu Nostrorumque ad ea Institutione. *Acta Romana,* VII, pp. 479–480 (June 29, 1933). For English translation, cf. *Selected Writings of Father Ledochowski,* pp. 568–570.

seems to be available, but it would seem that similar conditions prevailed elsewhere in the Assistancy. Through the years there had been intermittent attention to libraries; books and periodicals were acquired, and remnants of good libraries have formed the bases of some of the best American Jesuit libraries today. Most of the consistent, systematic development has taken place in the last twenty-five years, but it is not yet enough.

In the American Assistancy the current norms for judging the position of Jesuit academic libraries are clearly stated by our present Reverend Father General, Father Janssens, in the *Instructio Pro Assistentia Americae De Ordinandis Universitatibus, Collegiis, ac Scholis Altis et De Praeparandis Eorumdem Magistris:*

Article 22. Concerning libraries and their care.

1. Among the helps for studies, the library holds the first place. Consequently, in all Universities, Colleges, and High Schools the libraries are to be taken care of earnestly and zealously, according to the standards that prevail in schools of the same type and that are prescribed by the regional associations.

2. Therefore, in each school a collection of books and periodicals that is truly sufficient and appropriate to the curricula of each school is to be provided.

3. A definite annual sum of money is to be budgeted, which shall not be diverted to other uses.

4. The library demands a competent librarian who should be properly prepared for an office of such importance.

Article 24. Affiliation with accrediting associations.

After due consideration of present circumstances, it seems necessary that our Universities, Colleges, and High Schools should strive to obtain membership in their respective accrediting associations, and once they are members they should be outstanding among other institutions of the same class.[4]

Practically every item of the *Instructio* pertaining to libraries, except the explicit reference to non-Jesuit institutions and to the accrediting agencies can be found in older documents.

The spirit of the *Instructio* has been quite evident in the Assistancy during the past few years. The erection of new library buildings for the

[4] Translation of this section of *Instructio*. For original Latin version, cf. *Acta Romana*, Vol. XI, pp. 571–578 (Sept. 27, 1948).

Jesuit seminaries at Alma, at Woodstock, at Shrub Oak; all the new college and university library buildings, San Francisco, Loyola, Chicago, Loyola, New Orleans, Spring Hill, Boston College, Holy Cross College, Fordham University and proposed new buildings at St. Louis, Canisius, and Georgetown, to mention a few, show that in general in the American Assistancy there is a recognition of the need of the library.

In the *Instructio*, three standards are really set down, according to which the place of the library and its adequacy may be judged:

1. What each Jesuit institution needs to obtain its purposes and objectives
2. What the best non-Jesuit institutions of the same type have
3. What the accrediting associations set as standards or norms for their members.

Each institution will have its own statement of purposes and objectives. Each department or division of the school will specify rather exactly what it will contribute to the attainment of these purposes and objectives, and so too will the statements for each course. For all practical purposes, no matter how these statements may be phrased, implicit in all, for the purpose of the present discussion, would be the following: formation of habits of study, development of intellectual courage, ambition, initiative, originality, resourcefulness; familiarity with some source material, skill to evaluate documents, readiness and ease in using the resources of a fine library, some knowledge of bibliography in general, and a rather thorough knowledge of the bibliography of one or other subject matter, love of books. All this pertains to the development of the student.

The members of the faculty have their reasonable needs. They have to be kept properly restless and never complacent in their knowledge already acquired. The books and periodicals that will open up new avenues for thought and fresh understanding have to be available to them, if they are to remain inspiring teachers, and if they are to develop new ideas, worthy of publication. Futhermore, a good library will attract scholars and make them want to join the faculty and will tend to hold them once they have become part of the college or university.

To develop the desired habits and qualities in the students, a library with adequate resources is absolutely essential, or more precisely, adequate library resources are essential. In a metropolitan area, it is not necessary, and in any case, it is not possible for every library to have everything.

A sound belief in books as tools of education grows naturally out of the actual use of books jointly by the professor and the student. The

kind of habit of study that the college man should have is somewhat different from what he had as a high school student. In fact, the use of books, not just one book, the use made of the library, not merely as a study hall, may well be taken as an index of the quality of the college instructional program precisely in as much as it is supposed to be collegiate. Certainly the college strives to develop some sort of reasonable intellectual independence, some sort of intellectual self-reliance, confidence in one's own mind to search out and to attain truth. The student's mind is to mature, to learn how to sift out from many statements those at least that are consistent, and to work toward those that are true. He has to learn to have the intellectual courage of facing up to a great deal of hard intellectual work, to see a certain variety of opinions, and to learn rather exactly what they mean, to evaluate them, and to choose. This kind of study, this kind of mastery, this kind of courage for the most part cannot be developed without contact with a good library or its equivalent. The student comes to take for granted that he must overcome his natural and almost universal intellectual sloth, that his casual acceptance of the principle of getting by is to be rejected, and he is to develop some sort of mastery of the subject. The inspiration initially must come from the stimulating, well-read, well-informed teacher who will be more than ready to risk the challenge of the bright young student who may be a little too brash and at time a little too insistent. The library will do its part to help the student keep well within proper intellectual bounds; so that he avoids on one side baneful conformity and on the other erratic originality. The student learns from observing and studying, first under direction and then on his own, how to meet ideas, methods of presentation that are new and even somewhat strange, without feeling resentment and without bridling up at the challenge. He develops intellectual poise, he comes to enjoy the challenge and the novelty, and he can handle his ideas so that he is not damaged by the experience. It is difficult if not almost impossible in these days to develop such intellectual courage and ambition without the intelligent use of a good library.

The proper respect in the concrete for a student's individuality seems to postulate that books that suit him, that will develop him should be available to him and called to his attention. It is not possible for the teacher to know all his students so well that he can point out to each just the paragraph or chapter that he needs. The student after a while must be free to choose out of several good things what he thinks suits him, and gradually find himself as he works through the literature of an appealing field. The library leads him on from one topic to another, from one phase of a topic to another, and the student, once his curiosity is aroused

and he knows how to get about, will take it on himself to do much on his own. His own tastes can be developed and the particular talent he has, the particular interest, at times latent, may well be stimulated. He literally finds himself from such stimulation, from such interests in which he can indulge. The use of a rich collection of books and periodicals will prevent that deadly uniformity from developing in a group, and make each realize that there is something for him to grow into.

The college program should be such that a premium be put on resourcefulness. If the books are there, books well chosen, if there is some inspiration from the teacher and from fellow students, resourcefulness will be developed. The library after all is the organized collection of the thoughts, the traditions, the inheritance of the past. Familiarity with this treasure puts all these resources at the disposal of the student. He learns to make the most of them, learns to use and adapt them to his purpose. He becomes practiced in accuracy and discrimination. He develops a respect for the minds of others, and most important, he acquires intellectual confidence and humility.

All this implies that the materials are there, at least a fair sampling of them. Books, the classics in the fields under study, the special reference books, the bibliographies, the periodicals, the yearbooks, the maps, charts, pamphlets, the statistical records, the books on art, the books on music, the recitations and the musical recordings, the film and filmstrips, some paintings, statuary, the various types of equipment needed to use these resources—all these go to make the library.

The very order and arrangement, this in itself will indicate the relationships of the various fields of knowledge. The librarians will be available to help him make the necessary connection. He has received the instruction from his teacher. He now needs the help to get at the books and acquire skill in their use. In this very often the librarian complements the work of the classroom.

Teachers and librarians have to cooperate to be sure that the needed books are on hand; that obsolete books are removed and discarded, that the indexes to the various types of periodicals are kept up-to-date and that the students and faculty know that they are there and know how to use them. So many hours of precious time are wasted in useless work, in searching for material that could be located so easily if the guides to the materials were familiar to the searcher. The bibliographical section of the library and the card catalog are so important and quite often so little understood. For access to recorded knowledge these instruments to learning are essential. Without them, the student and the scholar are almost helpless. The range of good writing, the charm of literature and the joy of appreciation of poetry, drama, fiction, essays, philosophy and so

many other fields can be brought within the student's experience through a good library.

What is the place of the librarian in all this? It is fatally true, that usually and over a long period of time, the library will not be any better than the librarian. The person chosen to fill this position should have the same basic characteristics and qualities that you except of any scholar and administrator. He should have vigorous mental and physical health; he will have to exercise limitless patience; he must have a spirit of ready cooperation; he should have talent enough to understand what the professors are trying to do; he will have to search out many books, articles in periodicals, and devise ways of making them readily available. It is good to see that in that past few years some men like this have been set aside for library work. The position is so important and has so much power and influence, that the librarian should be chosen very carefully. It does seem strange, however, as it has been observed many times, that in the United States, so few Jesuits ambition being librarians, and so many even among those trained do not stay at library work.

If it is part of our college and university educational program to train men competent to do significant research, if there is a sincere purpose to develop men of intellectual power and balanced judgment, if it is desirable that the graduate compete for fellowships and scholarships, then the library is essential to the college that it attain these objectives. Our graduates will be men who enjoy civilized conversation, who can take part in civilized discussion, argument and debate, be civilized in their disagreements, and wise in making the compromises necessary in a complex society. The graduates may be expected to be ecclesiastical and civil leaders, men of whom we may be justly proud.

Jesuit Educational Institutions of the World: 1956-1957

William J. Mehok, S.J.

Members of the Society of Jesus througout the world are responsible for the education of 600,000 students enrolled in 2,000 schools which are under the direction of 759 different local administrations. This includes formal education of all levels and types from kindergarten to the university and for all categories of students from their own members to dock-workers. Such are the conclusions of the first stage of a survey of all Jesuit schools made on information presently available. These figures will be modified slightly when data are available for conducting a study on the various sub-groups. For the present, it is the only available estimate and may prove to be of some value. Furthermore, it is believed that in outlining the steps followed, the author can encourage his readers to aid him in clarifying his definitions and in correcting erroneous assumptions.

Three major problems confronted the writer upon undertaking this task of grappling with the world-wide network of Jesuit educational endeavour. The first was that of selecting a valid method; the second, that of finding a standard and objective norm for classifying schools, applicable to all countries; and the third, that of exercising correct judgment in applying these norms and in summarizing the information at his disposal. It is in the third task that most difficulties occur.

The method here used is that of systematic stratified sampling, using clusters as the sampling units. The meaning of this will become clear as the explanation proceeds. Suffice it to say that most of the statistics produced and consumed today are based on sampling. Sampling is theoretically sound and has proved valid in practice. General Motors, miracle drugs, atomic energy and UNIVAC would be impossible without the use of recent statistical development in the field of sampling. It is true that there is always an element of risk involved in following the conclusions of a sample survey, but the system has within itself the power of stating the extent of that risk. Since development in this field has been fairly recent, most of the literature on it is quite involved and abstract. Mills, *Statistical Methods,*[1] is written clearly and not too technically and

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[1] Mills, Frederick C. *Statistical Methods* (Third Edition), Chapter 19, "Sampling and Sampling Surveys," New York: Henry Holt and Co., 1955, pp. xviii + 842.

might be of value if further details about the methods here employed are desired.

The second major problem is that of classifying schools according to some principle that is uniform for all the countries in which there are Jesuit schools. In its monumental work, *World Survey of Education,*[2] United Nations Educational, Scientific and Cultural Organization offers us the best single starting point. In this book and the research that preceded it, UNESCO has had the prestige and resources to enlist the outstanding experts in the field and has, I think, succeeded in standardizing the basic categories into which schools are and shall be divided according to level and type of instruction. These categories are: 1) Preschool, 2) Primary, 3) Secondary Vocational (technical, professional, commercial), 5) Teacher Training (not related to a university), 6) Higher, 7) Special (for physically, mentally and otherwise handicapped students), and 8) Adult Education (all other terminal formal education for adults and for non-adults in so far as they are not subject to compulsory education laws). This classification has been used and any part of a Jesuit institution offering one or other of the above types of instruction is considered as a different school.

Since future use requires more detailed information, each of the above basic divisions can be subdivided according to: 1) the categories of students educated, 2) the type of control exercised by Jesuits in these schools, and 3) the content of the curriculum.

With reference to the categories of students educated, I have reduced them to the minimum that future statistical work will require. Hence, under any of UNESCO's groups, I would consider as different schools those organizations whose *primary* purpose is to impart formal instruction to: 1) Members of the Society of Jesus, 2) Lay (non-clerical) students, 3) Diocesan students (either clerics or those aspiring to the priesthood), and 4) Others (usually a combination of two of the aforementioned groups).

From the standpoint of administration, that minimum of control is presupposed on the part of the Rector (to be defined later) which enables him to request and expect a report on the students, faculty and physical plant of the organization in question. From preliminary investigation, I foresee two administrative categories: external and internal. The distinction is best explained by examples. First, external. A rector is delegated by the Bishop of the diocese to provide for the education of the children of the parish of which he is also pastor. The legal title to the school is held in the name of the diocese. I would consider

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[2] UNESCO. *World Survey of Education; Handbook of Educational Organization and Statistics,* 1954 edition, Paris: UNESCO, 1955, pp. 943.

this a Jesuit school but differing from one wherein the Society holds legal title to the property.

The internal administrative basis for dividing an institution into schools might best be exemplified as follows. Suppose a rector has under his charge two organizations of general secondary education occupying different physical plants, or administered by different principals, or offering education to two different groups of students, the one paying tuition and the other receiving scholarships, or a combination of these three conditions. In some instances, common sense would tell us that there are two different schools; in others it is not clear. In such rare situations and in other doubtful cases, I have gone beyond UNESCO's norms and followed the interpretation that the Society gives.

Finally, I would consider as different schools two organizations of higher learning which offer instruction in different curricular areas. Thus, a school or faculty or department of medicine is a school distinct from a similar division in law. On the same basis I would consider a Novitiate a school distinct from a Juniorate.

Theoretically it is possible to have at least 90 different types of schools under the administration of the same Rector, although in practice the number rarely exceeds ten.[3]

So much for the method and classification. Granted the desirability of having detailed information, I do not think that anyone will quarrel with the discussion up to this point. The important thing is that the divisions and subdivisions be mutually exclusive at their respective levels and that all of the units total up to the actual number within the scope of the survey.

It is in carrying out the third task, that of applying these objective norms to the classification of Jesuit schools and later to summarizing the results, that difficulties arise.

The present report is but the first stage of a more complete survey. Before one can obtain information about the different schools, he must first isolate them. For practical reasons of mailing and also for reasons intrinsic to the survey, Jesuit schools have been isolated and grouped under the officers to whom the Society has entrusted their administration. Before we can proceed, there are certain fundamental requisites to all sample surveys that require definition and explanation. These shall here be defined in so far as they pertain to the survey at hand.

Scope of the survey: 1) Divide all Jesuit institutions into those that have schools and those that do not. 2) Classify those institutions which

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[3] Eight (level and type) multiplied by 4 (categories of students) times 2 (administration) + 5–1 (Jesuit seminaries) + 20 (lay higher faculties) + 3–1 (diocesan faculties) = 90.

have schools according to the number of schools that comprise them. 3) Make a sample survey of the enrollment of Jesuit educational institutions.

Jesuit educational institution, or simply institution, is here used to designate all schools under the administration of the same rector. Technically this is known as a cluster.

Rector is here used synechdochically to signify the most immediate local superior properly so called. This class may include rectors, superiors, vice-superiors, presidents, district mission superiors or regular mission superiors. This officer either is or should be listed under the heading "Ordo Regiminis Superiorum" in the province catalogues. In the event of duplication, the local superior takes precedence; and in the event of two or more local superiors, the rector is considered as the unifying principal of a cluster. It is essential that every school be identified by one and only one rector. Viewed otherwise, it is essential that the total of any characteristic (e.g. student enrollment) for all institutions be exactly equal to the total of that characteristic for all schools taken singly.

A school is the elementary unit, one or more of which make up an institution or cluster. A school is a permanent organization of formal education wherein the same definite group of students meets at regular times for a fixed duration under the direction of preassigned teachers.

A Jesuit school is tentatively defined as one wherein a member of the Society of Jesus is responsible for the education of a definite group of students and is entrusted with at least that control whereby he can rightfully ask for and expect a report on the entire organization in question.

Many ambiguities and difficulties arise immediately. Since a more accurate definition of a Jesuit school presupposes a knowledge of what we are attempting to learn, I have been forced to make certain decisions which future inquiry may force me to modify. I shall set down some of the more persistent problems along with my decisions so that the scope of this survey may be made clear, even if others do not agree with my position.

This survey purports to include all Jesuit schools. In a certain sense, all Jesuit work could qualify as at least adult education. Limits must be set, sometimes arbitrarily, and hence I have excluded popular lectures, sermons, retreats and convert classes from my survey, if not by reason of the definition given above, at least on the grounds that they pertain to the parochial or other ministry rather than to the educational ministry of the Society.

Academic residences or dwellings, whether for Jesuit, lay, diocesan or other students, have been included although all of them do not clearly

come under the scope of the definition given. Most province catalogues consider them schools, and I shall do likewise.

What is the extent of Jesuit control required to make a school a Jesuit school? Here, again, I have followed the province catalogues although it is clear that there is a lack of uniformity among the different provinces in their reporting. I have excluded those institutions whose members may teach only in schools over which the Society has no control, such as state schools.

With reference to parochial schools, the province catalogues normally make a distinction between teaching catechism in parochial schools and directing such schools. Thus. the Father who "cur. agit schol. paroch." or "dir. schol. paroch." is habitually listed later as teaching catechism in the same school or hearing confessions there. I have excluded parochial schools wherein Jesuits merely teach, on the assumption that they would not have the proper authority to send a report on the entire school, and have included those where they direct or have charge of the parochial school on the assumption that they have such power. Probably, subsequent inquiry may force me to modify this position.

In the final report, schools wherein ambiguities arise will be clearly indicated, so that persons not agreeing with these decisions can always subtract that with which they disagree. It is easier to subtract what we know than to add what we do not know. With these rather lengthy, but, I think, necessary preliminary remarks, we can turn to the survey proper.

Under the heading "Ordo Regiminis Superiorum," the province catalogues[4] list 1083 rectors, superiors, vice-rectors, mission superiors, etc. Checking these officers against the houses, it was found that 26 were omitted, making an all-inclusive but sometimes duplicating total of 1109. Of these 1109, 52 were duplicates or did not apply to our present survey, thereby leaving 1057 which is the number of different institutions, educational or otherwise. Two hundred and ninety-eight of these do not have any schools in the sense explained above, and 759 do have at least one school. Put differently, there are 759 Jesuit educational institutions; or, for statistical purposes, there are 759 clusters that concern us here. Table 1 gives the breakdown of the above by Assistancies, China missions and Croatia.[5] What follows from here can be predicated only

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[4] The most recent catalogues available as of January 20, 1957 were used. Twenty were for the year beginning 1956 and 42 were for the year beginning 1957. Total: 62.

[5] Croatia is the only province of the Slavic Assistancy that has a recent published catalogue. Except for the mission of Hong Kong, all houses of the various China missions are grouped under China rather than under their respective provinces.

of these 759 Jesuit educational institutions or some parts thereof. These might be called the framework of our inquiry, or, as is technically known, the universe.

TABLE 1

Distribution by Assistancies of Jesuit mission and local Superiors, 1956–57

Assistancy	*(1)*	+	*(2)*	−	*(3)*	=	*(4)*	*(5)*	*(6)*
Italian	105		1		1		105	44	61
German	116		9		4		121	55	66
French	134		6		11		129	44	85
Spanish	162		2		5		159	36	123
English	180		3		6		177	35	142
American	210		4		16		198	27	171
Latin American	137		1		2		136	38	98
China, Croatia	39		0		7		32	19	13
TOTAL	1,083		26		52		1,057	298	759

(1) Number of entries in "Ordo Regiminis Superiorum" of 62 Province catalogues. 20—1956, 42—1957, Total 62.
(2) Number of omissions that are here supplied.
(3) Number of duplications or superiors not pertinent to the study.
(4) Total number of local superiors (and mission superiors where a school does not have a local superior).
(5) Total number of local superiors who do not administer any school.
(6) Total number of mission and local superiors who administer at least one school.

Table 2 breaks these institutions down into groups according to the number of schools in each. Thus, for example, there are 269 institutions which are made up of only one school each or 269 schools in all; 263 which are composed of two schools each (e.g. Novitiate and Juniorate) or 526 schools in all, and so on for all 759 institutions which have a combined total of 2,000 schools. Up to this point we have been dealing with a complete count. No statistical error, properly so called, has been introduced. The only possibility of error is that arising from insufficient or inaccurate information, erroneous judgment and faulty computation. All reasonable care has been taken to remove non-statistical error. Undoubtedly, subsequent revision will alter slightly what has hitherto been said; still this will not invalidate what follows since our survey concerns these and only these 759 Jesuit educational institutions.

Now we are prepared to make an estimate of any characteristic pertaining to these 759 institutions of the great number of possibilities. We shall here confine ourselves to one, student enrollment. The figures

TABLE 2

Seven hundred and fifty-nine educational institutions of the Society of Jesus arranged by number of schools per institution and total number of schools, 1956–57

S	*I*	*SI*	*S*	*I*	*SI*	*S*	*I*	*SI*
41	1	41	13	1	13	5	31	155
37	1	37	12	3	36	4	45	180
20	1	20	11	3	33	3	95	285
19	1	19	10	3	30	2	263	526
17	1	17	9	8	72	1	269	269
16	2	32	8	7	56			
15	3	45	7	8	56	TOTAL	759	2,000
14	0	0	6	13	78	AVERAGE	1	2.64

S Number of schools per institution.
I Number of institutions composed of number of schools in *S*.
SI Total number of schools. *S* multiplied by *I*.

are based on those given in the province catalogues, and in a few cases, on other sources. The steps involved in arriving at the results will not be treated in detail since we are primarily interested in the results. The procedure followed is that given in chapter 5 of Hansen, Hurwitz and Madow.[6]

Briefly, the basis of random sampling consists in this, that every item that makes up the whole has a known chance of being included in a sample drawn from this whole or universe. If the sample is a simple random sample, the chance of inclusion is the same for each item. Because of the great variability among the sampling units of this population (enrollment ranging from 0 to 13,000), such procedure would not be too precise. Hence, we use the knowledge we have to divide the institutions into sub-groups, known as strata, treat each stratum as a simple random sample, and combine the totals of these strata, giving proper weight to the chances that the items within the strata had of being included. On doing this, we can arrive at an estimate of the characteristic being measured together with an estimate of the amount by which this figure will not deviate from the true value of the characteristic total were it known.

One preliminary task remains, that of assigning the clusters into strata. The desideratum is to use available information to assign the

[6] Hansen, M. H., Hurwitz, W. N. and Madow, W. G. *Sample Survey Methods and Theories,* Vol. I, *Methods and Application,* New York; John Wiley and Sons, Inc., 1953, pp. xxii + 638. Chap. 5 and passim.

institutions to strata such that the items within the strata are as homogeneous as possible and that the strata are as heterogeneous as possible among themselves. It is reasonable to suppose that, in general, an institution with more schools is larger than one with fewer. Assuming this to be the case, institutions having 10 to 41 schools were put into the first stratum; institutions having 3 to 9 schools into the second stratum; those with two schools into the third stratum, and those with but one school into the fourth stratum. The assumption on which this stratification was made may prove erroneous, but it is all we have to work on. Should it prove false, no special advantage would be gained over a simple random sample.

Since the first stratum is so small, broad and discrete, an attempt was made to include all the items in the sample for that stratum, and, after much difficulty, proved successful. The sample for the second stratum was selected by deciding to include every fifth institution. Choosing at random a number from 1 to 5 (which number happened to be 3), we took the 3rd, 8th, 13th, 18th etc. institution (arranged in any order) and noted the total enrollment for the entire institution. A similar procedure was followed for the other two strata. This process of selection gives our method the name of *systematic* sample.

The procedure from here need not concern us since it is standard and serves no purpose other than that of checking the accuracy of computation. Some of the more interesting conclusions are given in Table 3. As an example, let us take stratum 3 and the "Combined Strata" columns. The average size of an institution having two schools is 435 students. Since there are 263 such institutions in the whole Society, the total enrollment for this stratum is estimated at 114,523.[7] Since this figure is based on but one of many possible samples that might have been chosen, the likelihood of its being the true stratum total is very slight. However, we can determine with any degree of confidence we desire the limits within which the true total would fall. In the case of stratum 3, the standard limits are from 99,603 to 129,443 or $\pm$ 14,920, or $\pm$ 13%. Applied to the average per institution, these limits are 378-492, or 435 $\pm$ 13%, or 435 $\pm$ 57.

You will note that the standard error and the coefficient of variation columns do not add up to the figure given in the "Combined Strata" row. It is precisely here wherein lies the advantage of stratification. We shall not go into the reasons apart from noting the fact lest one mistake this for an error in computation.

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[7] This, as most figures given in the tables and text, is correctly rounded to the nearest whole number. Except rarely, no attempt has been made to reconcile discrepancies arising from multiplication and division.

TABLE 3

Various estimates for 759 Jesuit educational institutions based on a systematic stratified sample of 111 institutions, 1956–57

Strata *Schools per institution*	*N* (1)	*n* (2)	*x* (3)	*Nx* (4)	$\delta_{x'}$ (5)	*V* % (6)	*ESU N* (7)	*ESU x* (8)
Stratum 1: 10–41	20	20	4,530	90,594	0	0	323	280
Stratum 2: 3–9	207	36	1,568	324,558	50,220	15	822	368
Stratum 3: 2	263	29	435	114,523	14,920	13	526	218
Stratum 4: 1	269	26	247	66,557	16,870	25	269	247
COMBINED STRATA	759	111	786	596,232	55,047	9	2,000	298

(1) Number of Jesuit educational institutions.
(2) Number of these institutions in sample.
(3) Estimate of average enrollment per institution based on sample.
(4) Estimate of total enrollment for all institutions in *(1)*.
(5) Standard error of estimated total enrollment *(4)*.
(6) Coefficient of variation. Percentage by which estimates may deviate from true value.
(7) Total number of schools in *(1)*.
(8) Average enrollment per school. Not based on a true random sample.

How sure are we that the enrollment of all Jesuit educational institutions is 596,232? Nothing short of a complete count could lead us to assert it is exactly that figure. Applying what we have learned from the sample, we can make definite assertions about the true total enrollment. Above, the standard limits of error were used. Some are content with the level of confidence they connote, namely, that two out of three other possible similarly drawn samples would produce a total enrollment figure within the standard limits of error. The "Current Population Survey" of the United States Department of Commerce, which is the basis of most major legislative, social and business decisions in the U.S., is content to publish standard limits of error, some of which are much higher proportionately than those here given. Standard values are convenient when a high level of confidence is not essential.

They are useful in another way. Since they are standard, by using standard multipliers we can arrive at any degree of probability, short of certainty, that may be desired simply by broadening the limits of error. To make the assertion that the true enrollment of Jesuit institutions at the 1% level of confidence is 596,232, we would have to add $\pm$ (55,047 x 2.58). This means that if the sampling were repeated 100 times using the same number of different institutions, only once would

we arrive at a total lying outside the interval ± 142,021; or that 99 out of a hundred times it would fall within the interval 454,211–738,253. If this is the case, then the true total would lie within these limits.

Since this is a pilot survey, made to help in future study, there are certain incidental conclusions that we can draw from it which will forestall costly errors in a more elaborate undertaking. The assumption on which this pilot survey rests is that schools are, in the long run, of the same size regardless of how they are combined into institutions. Is this a valid assumption? Also, from the study of this survey we can ascertain whether there are great regional differences among the institutions and schools; which knowledge would help us in arriving at greater precision in the future. In other words, are we justified in applying an average per institution which is derived from the whole Society to institutions within a definite province?

First, to answer the question regarding homogeneity of items within strata and heterogeneity among strata. Column 3 of Table 3 proves the fact of heterogeneity among the strata and column 8 points to a reasonable homogeneity within the strata. This latter point can be asserted quite definitely about non-American Assistancy schools as will be seen in the school average enrollment row of Table 5 (page 55).

It should be stressed that, although a school average multiplied by the number of schools yields the same product as a corresponding institution average multiplied by the number of institutions, we cannot legitimately attribute the same estimates of error to the schools. In the first place, these estimates were derived on the basis of institutions, and in the second place, the schools are not represented in the survey in the same proportion as are the institutions. Wheras only 15% of the total number of the institutions are represented in the sample, the proportion of schools to total number of schools is 28%. Moreover, the institutions were selected at random, whereas the schools were not.

Had schools been used as the primary sampling units and presuming, contrary to probability, that an identical total enrollment figure had been computed, then this total would be much more precise, that is, have a much smaller error. This is true both by reason of the greater sampling fraction, but especially because of the greater absolute number of units in the sample (566 schools against 111 institutions). Since such a survey was impossible at the time, we can only assume that the error on the basis of schools does not exceed that computed for institutions.

Upon inspection of the results given in Table 3, and after testing the average per institution by applying it to institutions of the American

and Spanish Assistancies, for both of which we have partial estimates of enrollment,[8] it was found that the average per institution underestimates the American institutions and over-estimates those of Spain. This in no way destroyed the validity of the conclusions of this survey up to this point since the survey does not purport to be accurate for the various geographic areas which make up the whole, but rather for the whole itself. Keeping this in mind, there is no harm in trying to find the basis of an estimate for the various parts.

TABLE 4

Various estimates for 588 Jesuit educational institutions (exclusive of those of the American Assistancy) based on a systematic stratified sample of 84 institutions, 1956–57

Strata Schools per institution	*N* (1)	*n* (2)	*x* (3)	*Nx* (4)	$\delta_{x'}$ (5)	*V* % (6)	*ESU N* (7)	*ESU x* (8)
Stratum 1: 10–41	13	13	2,439	31,707	0	0	233	136
Stratum 2: 3–9	164	28	1,171	192,085	33,885	18	687	280
Stratum 3: 2	211	23	426	89,913	8,810	10	422	213
Stratum 4: 1	200	20	157	31,390	12,597	40	200	157
COMBINED STRATA	588	84	587	345,095	37,210	11	1,542	224

(1) Number of Jesuit educational institutions exclusive of those of the American Assistancy.
(2) Number of these institutions in this sample.
(3) Estimate of average enrollment per institution based on sample.
(4) Estimate of total enrollment for all institutions in *(1)*.
(5) Standard error of estimated total enrollment *(4)*.
(6) Coefficient of variation. Percentage by which estimates may deviate from true value.
(7) Total number of schools in *(1)*.
(8) Average enrollment per school. Not based on a true random sample.

By a fortunate coincidence, the sample was so drawn that if we stopped at the American Assistancy, we had a legitimate though smaller sample for all institutions of the Society exclusive of the American Assistancy. Results were computed in the same manner as those for the entire Society and are given in Table 4. You will notice a marked difference in

[8] Cf. Costello, Richard D., S.J., "An Analysis of National Statistics: 1955–56," *Jesuit Educational Quarterly,* Vol. XVIII, No. 3 (January 1956), pp. 165–173 for institutions of the American Assistancy; and (Pastor, Juan, S.J.), *Labor Educacional de los Jesuitas Españoles,* Barcelona, 1956, a brochure printed on the occasion of *Congreso de Loyola,* July 30–Aug. 4, 1956 for institutions of the Spanish Assistancy. The scope of neither of these is as broad as that of the present survey and hence total enrollments are smaller than computed here.

the average per institution for the entire Society (786) and that for the non-American Assistancies (587). This difference is due to the fact that American schools tended to inflate all other institutions and to underestimate themselves.

The results of Tables 3 and 4 and the difference between them formed the basis of Table 5. The first noteworthy observation is that an American institution is at least twice as large as one of any other Assistancy. More remarkable is the extent of homogeneity among the averages of non-American schools.

Table 5

Number of Jesuit educational institutions and schools arranged by Assistancies, giving certain derived estimates, 1956–57

Item	*Ital.* (1)	*Germ.* (2)	*Fren.* (3)	*Span.* (4)	*Engl.* (5)	*L. Am.* (6)	*Non-Amer.* (7)	*Amer.* (8)	*Total* (9)
INSTITUTIONS									
Stratum 1	1	0	3	3	5	1	13	7	20
Stratum 2	16	8	15	51	41	33	164	43	207
Stratum 3	22	19	35	39	62	34	211	52	263
Stratum 4	35	39	32	30	34	30	200	69	269
Total inst.	74	66	85	123	142	98	588	171	759
Ave. enrol.	488	357	515	702	665	621	587[A]	1,469	786[C]
SCHOOLS									
Stratum 1	10	0	38	66	103	16	233	90	323
Stratum 2	60	37	58	207	191	134	687	195	882
Stratum 3	44	38	70	78	124	68	422	104	526
Stratum 4	35	39	32	30	34	30	200	69	269
Total sch.	149	114	198	381	452	248	1,542	458	2,000
Ave. enrol.	242	207	221	226	209	245	224[B]	548	298[D]
SCHOOLS PER INSTITUTION	2.0	1.7	2.3	3.1	3.2	2.5	2.6	2.7	2.6

(1) Italian Assistancy, Province of Croatia, Chinese missions except Hong Kong.
(2) German Assistancy.
(3) French Assistancy.
(4) Spanish Assistancy.
(5) English Assistancy.

(6) Latin American Assistancy.
(7) All institutions except those of the American Assistancy.
A) 586.8962, reliable within ± 11%. B) 223.7970.
(8) American Assistancy.
(9) 759 Jesuit educational institutions of the entire Society.
C) 785.5500, reliable within ± 9%. D) 298.1160.

We are now in a position to make a more accurate estimate of the schools of various provinces. If we were to multiply the average per non-American school (223.7970) by the number of such schools (1542) we would get 345,095, or exactly the same total as computed in Table 4. Similarly we would get the total for the whole Society (298.1160 x 2,000 = 596,232). By subtraction, we get the total for the American Assistancy and can compute the average per school which is 548.3340.

You will note that the average per school for any non-American Assistancy is quite close to the general average, 224. Hence, using this latter figure, a reasonably accurate estimate can be made of any non-American province; and if they were all combined, would come to the correct total enrollment. One would have to bear in mind that provinces of the German, English and French Assistancies would be slightly overestimated and that provinces of the Spanish, Italian and Latin American Assistancies would be slightly underestimated.

This speculation is highly interesting and could be carried on further, but it only distracts from what is hoped to be the chief contribution of this article.

In the first place, a realistic and proven method has been chosen and applied, and it shows promise of precise and reliable results when applied to a larger and differently selected sample. Secondly, an objective and standard criterion has been outlined which is applicable to all Jesuit educational institutions and their integral parts, the various schools. Thirdly, this criterion has been applied, and the number of Jesuit institutions and schools has been computed as accurately as present information allows. Unless future information introduces radical changes, this figure will remain stable over long periods of time.

Finally, a pilot study was made of total Jesuit school enrollment. It is not as precise an estimate as might be desired, but it does supply enough information to guide one in future work. Greater precision can always be obtained by using a more efficient method, or by increasing the sample size of the method employed, or by using the present method in a different and more effective manner. We have at our disposal enough information, that, given a minimum standard of precision desirable, we can compute the exact sample size needed to attain it by present methods at minimum cost. Furthermore, we have definite clues pointing toward a more efficient use of the present method. No change

in method seems to be indicated, but if it were, then another pilot study would be called for to check its advantage against the present one.

Although our findings are not too precise, we have something that we did not have before. A complete count, which is humanly impossible, or a larger sample would only give us an estimate which falls within the present limits of error. Presuming that the number of institutions is not changed, nothing that we have here learned will be nullified. Much remains to be done, but this lies chiefly in the area of studying the parts making up the whole which has here been surveyed and reported.

TAPE-RECORDED SPEECH CONTEST

The *Jesuit High-School Speech Committee* recently sponsored a Speech Contest for the Chicago and Detroit Provinces. The contest was a part of the regular speech program rather than an extra-curricular activity. It was based on the new *Speaking* series. One finalist from each of the four years of a high school recorded a selection on tape, thus giving the contest the form of a radio program. The tapes were then sent to a committee of judges. St. Xavier High School, Cincinnati, was first in school standing, with St. Ignatius High School, Cleveland, second. Trophies were presented to the schools in first and second place in school standing; medals were presented to the first-, second-, and third-place winners in each division.

News from the Field

THE RISING TIDE: In 1900 when the total population of the United States was 76,000,000, the total college population was 237,592; in 1955 when the total population was 165,000,000, college enrollment was 2,720,000. The current ratio of college enrollments to the college-age population group is about 40 per cent — slightly more than double the comparable figure before World War II. A prediction of 9,000,000 students in college by 1976 has been made.

STUDENT MORTALITY: Of every 20 children who set out in life together, only 16 enter high school, only 11 graduate from high school. Only 6 out of 10 of the top percent of high school graduates receive a bachelor's degree. Today only one-half of the ablest 25 percent of our high school graduates ever graduate from college.

THE RISING COST: Due to the rising costs of higher education, tuitions in many colleges have doubled during the past ten years (e.g. Columbia from $450 to $900, Yale $500 to $1,000, Oberlin $300 to $750). A recent study reveals that about one third of the private colleges plan to increase their tuition again in the very near future. State colleges have also been forced to increase their tuitions considerably.

SOUND INVESTMENT: In twelve years the World War II G.I. Bill trained 238,000 teachers, 450,000 engineers, 180,000 doctors and nurses, 113,000 scientists, 36,000 clergymen.

ALL-TIME HIGH: Engineering enrollments reached an all-time high in the fall of 1956 with an increase of 13.8 percent over 1955.

HIGH PHILANTHROPY: During 1956 philanthropic giving reached $6,500,000,000 according to conservative estimates.

SUMMER INSTITUTES IN SCIENCE: The National Science Foundation has allotted $4,800,000 for the support of summer institutes for 4,500 high-school and 250 college teachers of science and mathematics. The institutes will be held in 95 colleges and universities.

THE WOODROW WILSON FELLOWSHIP PROGRAM offers promising graduates a year of graduate training in any of the humanities or social sciences. The purpose is to recruit outstanding persons for college and university teaching.

THE DANFORTH FOUNDATION, an educational trust fund in St. Louis, receives application for fellowships to assist students who are preparing themselves for a career in college teaching.

HISTORY SERVICE CENTER: The American Historical Association has established a Service Center for Teachers of History in Wash-

ington, D.C. (Director: George Barr Carson, Jr.) The Center aims to assist teachers and administrators in two ways: (1) to prepare and/or supervise preparation of graded reading lists and pamphlets to aid teachers; (2) pamphlets summarizing recent research and interpretations in various fields of history (this phase to be stressed). It will also keep textbook writers as well as teachers abreast of the best thought and research in history.

OLYMPIC WINNERS: Tom Courtney of Fordham University won the 800-meter race at the 1956 Olympic games held in Australia. He is the first Olympic gold medalist in Fordham History.

Boston College held a reception for Harold Connolly, a recent graduate, who won the hammer-throwing title at the Olympic games. A full scholarship will be given henceforth in his name.

SEOUL: A large hillside in the western part of the city of Seoul, Korea, has been purchased as the site of a university to be conducted by Jesuits of the Wisconsin Province.

NEW NOVITIATE: A farm near Waconia, Minnesota, 30 miles from Minneapolis, was purchased by the Wisconsin Province for the site of a new novitiate.

ELECTIONS, APPOINTMENTS: Mr. William H. Conley, Educational Assistant to the president of Marquette University, elected president of Association of University Evening Colleges.

Father Wildred Crowley, University of Santa Clara, elected chairman of the N.C.A.A. Eligibility Committee. The N.C.A.A. has a membership embracing 491 institutions.

Father Francis X. Curran, Loyola Seminary, elected a director of the U.S. Catholic Historical Society.

Father Joseph Erhart, St. Joseph's College, named executive secretary-treasurer of the Debating Association of Pennsylvania College.

Brother James Kenny, Fordham University, has accepted an invitation to serve on the Advisory Board of the *College and University Business* magazine.

Father Laurence J. McGinley, President of Fordham University, was elected president of the Association of Colleges and Universities of the State of New York.

Father Paul L. O'Connor, President of Xavier University, appointed to the Cincinnati Advisory Council on Naval Affairs.

Father Paul Reinert, President of St. Louis University, elected president of the Missouri College Union.

Father John Wise, Loyola College, elected president of Maryland Association for Higher Education.

AWARDS: The American Association of Law Schools awarded its

outstanding achievement plaque to Georgetown University Law School for the second consecutive year.

The University of Scranton student newspaper, *The Aquinas,* won the All-American Award of the Associated Collegiate Press.

The Brooklyn Prep *Blue Book* received a first-place award from the Scholastic Press Association.

The Loyola High School, Los Angeles, yearbook, *El Camina,* received a first-class rating and certification from the Columbia Press Association.

St. Louis University High School received the city-wide "sportsmanship award."

GRANTS: Creighton University Medical School received a grant of $3,000 from the Damon Runyon Memorial Fund for cancer research.

Georgetown University Institute of Language and Linguistics received a grant of $100,000 from the National Science Foundation for research in the field of mechanical translation.

Loyola University, Chicago, department of Psychology received $30,000 from the Commonwealth Fund to help defray expenses connected with validation of a new medical aptitude test.

Marquette University Medical School received a $350,000 endowment from an anonymous Milwaukee donor to establish a Francis D. Murphy Chair of Medicine.

University of Scranton received a $5,000 gift from the Lackawanna Railroad for the University Development Program.

COMMUNITY SERVICE: Loyola University, Chicago, has sent into the Chicago community one of every four physicians, one of every two dentists, as well as a large number of outstanding lawyers, jurists, nurses, teachers, social workers, and business men.

VOCATIONS: Since 1888, 350 graduates of Regis College have been ordained to the sacred priesthood.

TREATMENTS: The dental clinic of Loyola University of the South provided 38,972 treatments during 1955-1956.

ONE OUT OF EIGHT: From close to 4,000 applicants Father Miles L. Fay, Dean of Admissions of Holy Cross College, must choose 525 students for the incoming freshman class.

SILVER JUBILEE GIFT: The Holy Cross Class of 1957 has pledged that they will present the college with $75,000 in their 25th anniversary year, 1982.

FILLING A NEED: More than 92 percent of the 1956 graduates of the Dental School of the University of Detroit gave $200 each as a gift to relieve the most pressing need of the school.

SENATORIAL WISDOM: Mr. Edward F. Yost of the Washington

Senators baseball team spoke to the members of the marketing club of St. Peter's College on "Baseball and Big Business."

VISITING POETS: The Loyola University, Chicago, David B. Steinman Visiting Poets series featured readings by Allen Tate, Karl Shapiro, Dame Edith Sitwell, and e.e. cummings.

PHOTOGRAPHIC MEMORY: A 37-year-old picture of 37 nuns was sent to Creighton University for identification. Miss McDermott, long-time assistant registrar, promptly identified all 37 by their religious and family names.

IN MEMORIAM: The new building of the Georgetown University School of Foreign Service will be named for the late Father Edmund A. Walsh, founder and Regent of the school.

ON OBSERVATORY HILL: The National Geographic Society has constructed a new housing on Observatory Hill at Georgetown for a new spectograph for observation of the spectra of planets.

BUILDINGS RAZED AND RAISED: At Rockhurst College, Janssens Hall and the old cafeteria have been demolished. The area will be used as a quadrangle. New buildings have taken over the functions of those torn down.

COMMUNICATIO: A group of 26 Methodist theological students from Boston University visited the Boston College School of Education and heard a talk on Catholic Education by Father Charles Donovan, Dean of the School of Education.

PASSING THE BAR: The first Jesuit priest to pass the California Bar examination is Father Richard Vachon, Chaplain of University of San Francisco Law School.

BASKETBALL LECTURES: During the intermission between halves of the Canisius College basketball games, a series of talks on the academic life of the college was given.

HUMANISTS-PHILOLOGISTS: The St. Peter's College Classics Club is divided into two groups—the Humanists who study the Classics in translation, and the Philologists who study them in the original.

WINDFALL: A grant of $20,000 for studies in meteorological and atmospheric activities has been awarded to Loyola University, New Orleans, by the Edward G. Schlieder Educational Foundation. Father Ernest Gherzi, internationally known meteorologist, will direct the studies.

WINNER: Marquette University won the Mid-West Jesuit Intercollegiate English Contest.

PRE-SEMINARY LATIN: Recently our attention has been called to courses for prospective seminarians in Latin. Loyola University,

Chicago, St. Louis University, Seattle University, and John Carroll University offer courses in Pre-Seminary Latin.

GLACIER PRIEST: Father Bernard R. Hubbard has finished with exploration and mapping expeditions, but despite partial paralysis from a stroke he has lined up an ambitious schedule of work, cataloging some 250,000 still-photo negatives, editing 13 educational and travel films for television, and collaborating with Father John M. Scott in the production of a general science text.

POOR CLARES: The Theologians of Alma College helped the Poor Clares to move to their new monastery.

SONG AND CHEER: The Philosophers' Choir of Assumption Hall, Spring Hill, toured the hospitals of Mobile to bring song and cheer to the shut-ins.

PRAYER FOR THE DAY: The Sodality Academy of St. Mary's College, Kansas, has completed the first draft of the Mental Prayer Book for High School Sodalists. The work contains material for every day and follows the basic outline of the Spiritual Exercises.

LOYOLA WINS: The Philosophers of Loyola Seminary, Shrub Oak, New York, entertained the Maryknoll basketball team. Loyola won.

DEAD SEA SCROLLS: Father Herbert Musurillo of Bellarmine College, Plattsburg, New York, gave a talk in Beth Israel Hall, Plattsburg, under the auspices of the Unitarian Fellowship, on the Problem of the Dead Sea Scrolls.

FIRE destroyed the roof and upper part of the boys' building at Holy Rosary Mission.

TEN-YEAR STATISTICS of St. Philip Neri School showed 94 Ordained Alumni (63 diocesan priests in 39 dioceses, 31 Religious in 17 orders). Seminarians for 68 dioceses number 230, while those studying for 30 religious orders and congregations number 173 (the most numerous—Jesuits 56, Trappists 13).

PENSION PLAN: St. Xavier High School has set up a new pension plan for its 27 lay staff members. To set the plan in motion, the high school contributed $42,000 to cover the pension costs of the employees' past service. Thereafter, lay employees will pay 5 percent of the gross amount of their pay checks into a pension fund; the school will match their contributions.

STITCH IN TIME: St. Ignatius High School, Chicago, will administer a type of college aptitude test to sophomores. The test will reveal weaknesses which can be diagnosed and remedied.

ESSAY ANTHOLOGY: Eight students' essays submitted by Gonzaga High School, Washington, D.C., to the National Essay Association were accepted for publication in the annual anthology.

PERMANENT POSSESSION: For the third consecutive year a Brophy Preparatory student won the Voice of Democracy Contest in the city of Phoenix, thus winning permanent possession of the trophy.

GETTING ALONG SWIMMINGLY: The University of Detroit High School Swimming Team won the City Championship and captured 8 of 30 places on the All-City Team.

LITTLE BROWN JUG: St. Louis University High School won the Little Brown Jug football trophy for the third consecutive year.

HISTORY: Cranwell School experienced an undefeated-untied football season for the first time in history.

SURPRISE: Campion students were told to remain in their places in the stands during half-time and after the end of the basketball game. This sounded like punishment, but surprise—the famous Harlem Globetrotters appeared and put on an exhibition with the House of David.

SWEEPSTAKES WINNER: The debaters and elocutionists of Jesuit High, Dallas, won the Sweepstakes trophy, far outdistancing the field.

CAMERAS GO TO SCHOOL: Argus Cameras, Inc., offers a free camera kit (C-3 and Super 75 with flashguns) to high school photography classes and photography clubs. For information write to Educational Services Division, Argus Cameras, Inc., Ann Arbor, Michigan.

HAIR STYLES: The Dads' Club of Jesuit High, Tampa, sponsored a Hair Style and Fashion Show for the school. Two local hair stylists offered their services to help make it a success.

NO SALE: The Wall Street Journal, January 10, 1957, carried the following advertisement: "Blue Chips—Apartment Building for Sale—Must be disposed of rapidly. The Hinkle Building, three-story stone structure containing 53 furnished units. Elevator and intercommunication system, adequate parking facilities. Suburban atmosphere with direct communication to downtown Cincinnati. Write, wire, or call Paul L. O'Connor, Hinkle Building, Victory Parkway, Cincinnati."

Father O'Connor, President of Xavier University, received a number of offers from prospective buyers and a bill for $36.00 from the *Journal.* Father O'Connor had to decline offers for the Hinkle Building, Xavier University faculty residence, with an explanation that it was the work of a prankster but that Xavier would accept gifts for a new faculty building.

J. Barry Dwyer, S.J.

1910–1957

Father J. Barry Dwyer, Prefect of Studies for the Chicago Province, was killed in an automobile accident near Cincinnati on January 15, 1957. Thus, in the inscrutable designs of Providence, a reckless seventeen-year-old driver ended the career of an outstanding and charming Jesuit educator. For Father Dwyer had just about everything one could hope for in a Province Prefect: the training of a competent scholar, experience as an administrator, and a delightful personality.

As a scholar he was an authority on John Gower. Commenting on his scholarship, Dr. George R. Coffman, his dissertation director at the University of North Carolina, wrote in 1949: "Father Dwyer is one of the most promising men for productive scholarship I have come to know here during my fifteen years of supervising all graduate students in English here and my nineteen years directing theses and dissertations for individual candidates." Urging Father Dwyer to publish his dissertation, he hails his work as pioneering. "It clearly marks a new stage in the employment of tradition as a method. In vitality and validity this study is a far cry from that of *sources* only; even of sources and direct influences. It is *prolegomena.*"

Scholar he was, but administrator he was to become; and so after three years of teaching in the department of English at the University of Detroit he was appointed Dean of the College of Liberal Arts there. He may not have been what one would call a dynamic dean; he certainly did foster the best of liberal arts traditions, and was held in high regard by his faculty both professionally and personally. One lay member remarked after his death that he had "never heard any faculty member say an unkind word about Father Dwyer."

After three years in the deanship he was appointed Province Prefect of Studies. In that capacity he attended only one meeting of the Executive Committee, that held at Fairfield University in September, 1956; but it took his fellow members on the Executive Committee no longer than that to recognize his worth, his scholarly competence, good judgment, wit, and amiability. His membership on a subcommittee of the J.E.A. took him to Philadelphia in January. After the meeting he did not tarry in Philadelphia, much as he wanted to see more of that city. Instead, unselfishly he pushed on to New York City to visit his sick sister and a brother there. It was on his return from New York and on his way to his last visitation of the year, at Milford Novitiate, that his life of scholarship was ended by the fatal automobile accident.

It may not be amiss to quote here what he wrote some time ago about the Jesuit need of scholarship, a topic dear to his heart.

> I only hope the good Lord gives me adequate health to do something in that direction [of scholarship] and perhaps to stimulate the interest of some keener minds to the same end. We have talent to burn. . . . These informal jottings are not meant to be a criticism of good men. They are the expression of a conviction and a hope: a conviction that we are not making a sufficient impact on the learned world outside our own circle, not, at least, in proportion to our numbers; the hope is that in time more and more of the talented younger men that we have in abundance will realize the need we have to advance scholarship.

Surely we may count on the scholarly and kindly Father Dwyer to continue his interest and efforts in behalf of the Jesuit apostolate in teaching and scholarship. May he rest in peace!