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ARTICLE: KNOWLEDGE TRANSFER: SUGGESTIONS FOR DEVELOPING COUNTRIES ON THE RECEIVING  
END

Tamar Frankel \*

\* Professor of Law, Boston University School of Law. I am indebted to the participants of the Boston University Workshop and especially Professor Dan-Meir Cohen for their helpful and insightful comments. Many thanks to Jason Vargelis, Esq. for his creative editing and Andrew Pitts, Esq. for his valuable comments. William Hecker, Esq. provided invaluable research.

**SUMMARY:**

... While developing countries and various funding agencies use the armies of consultants standing ready to provide the products of their expertise, few of these countries acquire knowledge through teaching services. ... To effectuate this knowledge transfer, the China Project employs a teaching mode, a consulting mode, and a combination of the two. ... In terms of certain factors, knowledge transfer by teaching is likely to cost more than knowledge transfer by consulting. ... The recipient of knowledge transfer must compare and identify both the costs and the benefits of teaching and consulting. ... The specific factors that are likely to render consulting cheaper than teaching include the: (1) time necessary to transfer the knowledge; (2) level of expertise; (3) degree of risk and personal commitment required of the transferees in achieving the knowledge transfer; (4) loss of autonomy and power during the process; and (5) cost of monitoring the knowledge transferor. ... Second, the lower the transferor's discretion to determine the form, content, substance, quality, and quantity of the transferred knowledge, the lower the monitoring cost for the transferee. ... This is because once the consultant is gone, there is a danger no one will be able to answer questions and provide help, and permanent consulting may cost more than temporary consulting or teaching. ...

**TEXT:**

I. Introduction

Developing countries have a substantial and urgent need for knowledge transfers to perform certain services and tasks because their people do not possess this knowledge. n1 To obtain it, these countries can choose from essentially three options. One option is to use foreign consultants already knowledgeable to perform the desired tasks. A second option is to use foreign teachers, in class or guided practice. The people in the country would then acquire the knowledge and perform the tasks. A third option is to use a mix of the services of consultants and teachers.

While developing countries and various funding agencies use the armies of consultants standing ready to provide the products of their expertise, few of these countries acquire knowledge through teaching services. Are they choosing wisely? How should they make such choices?

Very little has been written about how developing countries, or any organization for that matter, should choose the appropriate mode of knowledge transfer. <sup>n2</sup> My purpose is to begin filling the void by evaluating knowledge transfer from the point of view of the recipients of knowledge.

This Article is the by-product of my involvement, since the summer of 1992, in an ongoing project co-sponsored by the government of China and the United Nations Development Programs. The project is designed to help the Chinese draft their laws. To effectuate this knowledge transfer, the China Project employs a teaching mode, a consulting mode, and a combination of the two. <sup>n3</sup> Because this Article is aimed mainly at developing countries, I use the China Project as an example.

This Article offers a list of factors for transferee developing countries to consider when choosing a mode or modes of knowledge transfer. The recipient countries can apply their own values to each factor and establish priorities among the factors. Even so, and especially in complex situations, knowledge transferees should not determine the mode of knowledge transfer automatically using only the weighted factors. Instead, the weighted factors should be used as a base and adjusted in light of the countries' experience, and the decision makers' judgment and intuition.

Part II of this Article compares teaching and consulting, mainly with respect to their immediate results. Both modes of knowledge transfer are designed to achieve the same goal, but they reach this goal in different ways and at different times. For example, in the China Project, consultants can produce legislation and teachers help produce draftsmen who, in turn, will produce legislation. The implications from the similarities and differences of these modes of transfer will unfold throughout this Article.

Part III compares the costs and benefits of teaching and consulting. In terms of certain factors, knowledge transfer by teaching is likely to cost more than knowledge transfer by consulting. The reverse may be true in regards to other factors. The cost of each mode depends mainly on the value transferees attach to the particular factors and on the volume of services involved in the transfers. Thus, it is likely that consulting will cost less than teaching with respect to: (1) the time necessary to achieve the objective (produce the particular service); (2) the quality of the service in the short term; (3) the degree both of risk to the transferees and of their personal commitment necessary to achieve their objective; (4) the transferees' loss of autonomy and power during the transfer process; and (5) the transferees' cost of monitoring the transferors. Clearly, if the value of these factors to the transferees is low, the differences between consulting and teaching will shrink, and both modes of transfer may be equally desirable. As the value of these factors rises, it is likely that consulting will be more desirable than teaching.

Part III completes this cost/benefit analysis by considering additional factors which may render teaching far less costly than consulting. These factors include: (1) the cost of necessary information about the transferees; <sup>n4</sup> (2) the cost of employing students rather than consultants; and (3) the value of the transferees' autonomy and independence after the learning process is complete. Again, if the value of these factors to the transferees is low, the differences between consulting and teaching will shrink. The higher the value that transferees place on autonomy and independence, for example, the lower will be the cost of teaching compared to consulting. In order to determine the most effective mode of knowledge transfer, knowledge transferees should adopt a three-stage analysis: First, put values on both types of factors; second, integrate them. The result, however, is subject to an additional factor: the volume of the services and products of the particular transferred knowledge.

This factor is discussed in part IV of the Article. As the volume of the desired services or products grows, teaching can become less costly as a mode of knowledge transfer. Even though costs differ with the services produced by the transferred knowledge and the nature of the transferors and transferees, this factor applies, regardless of the differences.

Thus, had China planned to produce one piece of legislation, I believe consulting would have been the preferable mode of knowledge transfer. Since China plans to produce a far larger number of bills (e.g., over twenty) teaching, alone or with the help of consultants, is likely to be the best mode of knowledge transfer. Similarly, up to a certain number of legislative drafts, teaching with the help of consultants will be the best mode. Above that number of legislative drafts, and as time goes by and students become expert draftsmen, optimal knowledge transfer will be teaching with little or no consulting.

Finally, part V of the Article compares knowledge transfer through "teaching-by-doing" with the aid of consulting, adopted in the China Project, to teaching separately or consulting separately. I conclude that combined teaching and consulting produces neither optimal teaching nor optimal consulting. However, the combination provides substantial savings by capturing some advantages of both modes of knowledge transfer and by reducing some of the costs of both modes. Even though separately and in sequence teaching and consulting can produce better quality services, under

certain circumstances, the combined use of these modes simultaneously can result in more and better knowledge transfer at lower cost.

## II. Consulting Compared to Teaching

In some respects consulting and teaching are similar. First, both provide knowledge the transferees cannot (or would not) acquire on their own. Thus, both modes require the use of a language and a level of sophistication that the recipient (whether a student or a client) can understand. Second, consulting and teaching can transfer knowledge through various forms: personal or impersonal, custom-made or mass-produced (e.g., books, audio and video tapes, computer programs).<sup>n5</sup> Third, and most importantly, the ultimate goal of both consulting and teaching is to provide expert advice or service (whether a legislative draft, a liver transplant, or an airport design).

Consulting and teaching differ, however, in their immediate goals. Specifically, the immediate goal of consulting is to provide expert advice or service; the immediate goal of teaching is to help the student acquire knowledge so that he can provide expert advice or service. Thus, the immediate "product" of consulting is the expert advice or service; the immediate product of teaching is a knowledgeable and skillful person, or, put differently, an expert consultant who will provide the ultimate advice or service.<sup>n6</sup>

Even though both modes of knowledge transfer can involve the same subject matter, the modes of transfer also differ in their range and focus. Because consulting usually concerns specific issues or problems, consultants are chosen for their specific knowledge and skill. By contrast, because teaching usually covers a wide range of concerns and problems, teachers are chosen for their broad understanding of a subject matter as well as for their ability to teach.<sup>n7</sup>

## III. Costs of Consulting and Teaching

Arguably, if a ready-made expert is available, why invest in acquiring the expertise? Although it may seem that teaching is always more costly than consulting,<sup>n8</sup> this is not necessarily the case. Rather, the recipient of knowledge transfer - whether a nation, a corporation, or an individual - may discover that hiring expertise is more costly than acquiring expertise. The recipient of knowledge transfer must compare and identify both the costs and the benefits of teaching and consulting.

### A. When Teaching is More Costly than Consulting

In some respects, teaching about one or few products is likely to be more costly than consulting. The specific factors that are likely to render consulting cheaper than teaching include the: (1) time necessary to transfer the knowledge; (2) level of expertise; (3) degree of risk and personal commitment required of the transferees in achieving the knowledge transfer; (4) loss of autonomy and power during the process; and (5) cost of monitoring the knowledge transferor.<sup>n9</sup> However, as the volume of products increases, the cost of consulting as compared to teaching may equalize or even increase.

#### 1. Time Necessary to Achieve Knowledge Transfer

The more time-consuming knowledge transfer is, the more costly it becomes for the transferee. In principle, teaching persons to provide a service or advice necessarily takes longer than consulting because teaching is a condition precedent to ultimately providing the service. The actual time that it takes to learn depends on the skill to be acquired and the capability of the students. For example, it is more time-consuming to acquire legislative drafting skills than to learn how to use a word processor. Thus, consulting brings results that meet immediate needs with a relatively small time commitment.<sup>n10</sup>

Time may affect the cost of teaching in yet another way. Knowledge, especially of certain types of technology (such as computer technology) can quickly become obsolete; it may have a short lifecycle, and can lose its full value.<sup>n11</sup> Thus, the shorter the life cycle of the subject matter taught, the higher will be the cost of teaching compared to consulting.

#### 2. Level of Expertise to be Transferred

The level of expertise to be transferred also affects the cost of the knowledge transfer. Even though consultants with such expertise will charge relatively more, the higher the level of expertise needed, the higher will be the cost of teaching. Thus, it is more costly to transfer greater expertise by teaching, as compared to providing the service involving such expertise by consultants who already possess the knowledge and skills. If, for example, it takes three lessons to learn word processing, it may be less costly to acquire the skill than to engage a typist. However, if it takes

years to study law, it may be cheaper to engage a consultant to draft one piece of legislation than to learn law. This is especially true if the service is required only once or a few times.

Further, the higher the level of necessary knowledge and skill, the higher the costs of teaching will be in terms of the demands on students: prior investment in education, qualifications, and abilities; preparation time needed to acquire the transferred knowledge; ability to quickly hone the skill; <sup>n12</sup> and effort. For example, in the case of China, drafting skills are difficult to acquire because China does not have a tradition of legislative drafting. In addition, the country is in transition. Helpful and effective legislative skills require not merely knowledge of other legal systems and the ability to learn from the experience of others, but also creative solutions that have not been tried elsewhere, but may be appropriate for China. In sum, the higher the level of skill to be transferred, the higher the cost of the knowledge transfer by teaching.

### 3. Transferee's Risk and Personal Commitment

The costs of knowledge transfer increase with the risk (i.e., uncertainty) that the transfer will be unsuccessful. A number of factors may contribute to this risk. First, the product of knowledge transfer is perishable. If a client fails to use the product of consulting, the value of the product will vanish. However, the product of consulting can wait for users (unless it becomes obsolete). In contrast, unless a student makes use of his acquired knowledge, and continuously nourishes, revitalizes, exercises, and upgrades it, that knowledge is likely to lose its full value. The less frequently the graduating student uses the skills he acquired, the more likely he is to forget them. Therefore, if the skills are not used frequently, the cost of acquiring them may be higher than the relative costs of consulting.

Second, the higher the personal investment and commitment required of the transferee, the more costly the process will be for him. Compared to the consulting client, the learning student plays a more active personal role in the knowledge transfer. The student must invest of himself; undergo personal change; suffer anxiety; commit himself, his energy, and his time; and bear the cost of lost opportunities and leisure to acquire the knowledge (in addition to paying for it). The student bears a higher responsibility for the success and quality of the knowledge transfer: He alone can demonstrate the success of such a transfer.

By contrast, apart from making clarifications and providing supplemental information, the client contributes little to the creation of the consulting product. The consultant provides knowledge in order to achieve the consulting goal (e.g., solving a problem). Hence, on this score, knowledge transfer through teaching is more costly. Although consulting may involve for a client similar costs of personal investment, commitment, and responsibility, teaching involves higher costs for the student.

### 4. Loss of Autonomy and Power During Transfer

Knowledge transfer involves different degrees of power exerted by the transferor over the transferee. The more power the transferor can exert over the transferee during the process, the higher are the costs to the transferee. <sup>n13</sup>

On this score teaching often costs more than consulting because students tend to view their teacher as an authority figure - dominant and controlling - even when the teacher emphasizes cooperation or treats the students as purchasers of knowledge. In contrast, the power relationship between client and consultant is relatively balanced because the client is viewed as the purchaser of knowledge (i.e., services) and plays the controller's role, evaluating the quality of the consultant's performance and the future use of the consultant's product.

This difference in the relative power cannot be explained by the disparity of knowledge between the parties. After all, both relationships are designed to transfer knowledge from the person who has it (teacher or consultant) to the person who does not (student or client). Instead, the difference in power seems to be grounded in imagery, a view of a pattern in human life and familial relationships. <sup>n14</sup> For example, the idea that adults may return to formal schooling periodically is not acceptable in all societies. The traditional view divides life into pre-adulthood schooling (learning) and post-adulthood working (doing) or gaining experience at work. Learning usually brings up an image of a minor in a subservient position, coupled with expectations of a minor's personal commitment to improving himself, and submitting to tests designed and administered by others. Adults learn by acquiring actual work experience (perhaps with the help of mentors but not school teachers). While the images of teacher and father are closely related as authority figures, the image of a wise adviser (the consultant) is mostly equated with a hired servant. <sup>n15</sup> Thus, in terms of the relative power between knowledge transferor and transferee, the process of teaching seems to be more emotionally costly to the recipient than the process of consulting.

### 5. Cost of Monitoring the Transferor

Transferees must monitor transferors to assure careful and reliable knowledge transfer. n16 Transferors with relatively greater discretion than transferees can determine the substance and value of the transferred knowledge. This discretion exposes recipients to the risk that the transferor will lack competence, shirk his duties, or be influenced by conflicting interests. n17

The recipients' ability to monitor the transferors' performance depends on the level of skill required, the transferors' discretion, the relationship between the parties, and the existence of other monitors. First, the higher the level of the transferees' skills, the less costly it is for him to monitor the quality of the knowledge that is transferred. A skilled transferee knows enough about the subject matter to judge the transferor's performance. However, the higher the skills of the transferee, the less valuable the knowledge transfer becomes. n18

Second, the lower the transferor's discretion to determine the form, content, substance, quality, and quantity of the transferred knowledge, the lower the monitoring cost for the transferee. In other words, the more specific the purpose of the transfer, the easier it is to monitor the transferor.

Third, the relationship between the parties and its effect on the success of the transfer will affect monitoring costs. For example, teaching involves higher monitoring costs because a successful effort depends not only on the teacher but also on the student's ability and commitment. It is possible to evaluate accurately the consultant by ascertaining his expertise, efforts, and especially his product because the product is specific and amenable to comparison with like products. It is more difficult to accurately judge a teacher's effectiveness by the student's success in acquiring the skill. n19

Finally, the existence of other monitors affects the transferee's monitoring costs. In the China Project, for example, the United Nations Development Programs continuously monitors the Project and its results. Thus, to some extent, the number of monitors (i.e., numerous students or third party examiners) may reduce the cost of monitoring the teacher. n20

## B. When Teaching is Cheaper than Consulting

If a knowledge transferee may acquire skills easily, consulting may cost more than teaching. More importantly, there are advantages to the autonomy and independence that result from "doing it oneself," whether "oneself" is an individual, a corporation, or a country. Thus, in certain circumstances teaching is likely to be less costly than consulting.

### 1. Transferee Autonomy and Independence

The value of the autonomy and independence that knowledge transfer brings can differ greatly, depending on the nature of the knowledge, its future use, its competitive advantages, n21 and the subjective value that recipients place on autonomy and independence. Knowledge gained by teaching and the resultant ability to learn on one's own, strengthens the knowledge recipient's autonomy. n22 Usually the transferee will become autonomous only if he possesses skills to produce the product himself. For example, the purpose of the China Project is to enable the Chinese to draft their laws on their own, securing China's independence in legal drafting by teaching draftsmen, and preparing teachers to transfer their expertise to other Chinese officials. It is not surprising that China places a high value on independence in this area, as do most countries with respect to service areas vital to them. n23 Drafting laws is a politically sensitive function that countries prefer to fully control. Although the value of independence is subjective and hard to quantify, it can be a crucial component to determining the relative cost of teaching and consulting. n24 In sum, to the extent that the knowledge transferee values the autonomy that learning ensures, the lower cost of teaching should be factored into the cost/benefit calculus.

### 2. Information Transferors Must have for Effective Knowledge Transfer

Another factor that may reduce the cost of teaching as compared to consulting relates to information necessary for the transferor to effect the knowledge transfer. n25 Some transfers require little added information. For example, a heart surgeon can perform an operation on any person. It would probably be helpful if he had information about the patient's language and culture, but this information is not essential. The necessary information that the transferor must possess to transfer knowledge in the social sciences, such as law, is far greater than the information required for him to transfer knowledge in mathematics or medicine. In transferring knowledge regarding law or social sciences, the transferor must have substantial information about the recipient of the knowledge. It is important that the transferor understand the customs of the transferee country and the common meaning of its language. For example, the mere copying of foreign laws is useless because experience has shown that copied laws are not adopted in practice and become a dead letter. To be effective, laws must address the needs of the particular society and fit its history and

culture. Therefore, the quality of laws drafted for China by the Chinese is likely to be higher than the quality of laws drafted for China by foreign consultants. Even if foreigners could reach the correct decisions and methods through analysis, the Chinese would reach these decisions and methods through intuition - cheaper, faster, and generally more reliably. n26

### 3. Support Information

In addition to general information on the history, language and culture of a country, both consultants and teachers need more specific information. One item of information relates to the purpose of the transfer. A teacher should know what skills the student desires to acquire (language, mathematics, law, cooking); a consultant should have a clear idea of the purpose and goals of the consultation. Another item relates to the recipient himself. A teacher needs information about the student's current level of knowledge and sophistication, his ability to acquire the skills, how he relates to teachers, and how he perceives his role as learner. Similarly, a consultant needs information about his client's capacity and level of sophistication, his decision-making power, his relevant environment (cultural, historical, physical, and political) n27 and his perception of the consultant's role. Further, the consultant requires information about the problems his client failed to solve, the reasons for the problems, the context in which they arose, n28 and the client's desired solutions. Finally, a transferor in both modes should receive feedback during the transfer process: a teacher, to determine the student's progress (e.g., by tests); a consultant, to determine the client's reactions to the consultant's work.

Even when this specific information used by teachers and consultants is identical or similar, it is used in different ways. This is because the information is used for different immediate goals and bears different emphasis and importance. For example, for the teacher, information about the student may be far more important than similar information for the consultant about the client. Also, the timing involved in receiving information differs in both modes of transfer. An effective consultant should receive information much earlier in the knowledge transfer process than the teacher. n29 Information about the transferee and his environment can be very costly in any transfer mode, especially when the transferor is foreign. n30 As the costs of this type of information rise, so will the cost of consulting by foreign experts, and the relative cost of teaching local talent will fall.

### IV. The Effect of Volume

The recipients of knowledge transfer can follow the factors listed in part III and determine the mode of knowledge transfer by weighing these factors. This, however, should not end the inquiry. One crucial element that transferees must factor into their calculation of the costs and benefits of the modes of knowledge transfer is the anticipated or planned volume of the ultimate product of the transfer. The optimal mode may depend on the desired amount of knowledge to be transferred. Thus, a knowledge transferee must ask himself how frequently the knowledge will be used and how important is the continued availability of the knowledge. A similar inquiry appears in other contexts, such as a company's decision to: (1) make a product in-house or purchase it; or (2) to acquire a service by hiring a permanent employee, hiring a temporary employee, or resorting to the services of an independent contractor ("out-source" in current jargon).

As the need for a particular service increases in volume, the cost of developing in-house capability decreases. Although temporary consulting may cost less than teaching, if the service is needed long-term, consulting may raise problems. This is because once the consultant is gone, there is a danger no one will be able to answer questions and provide help, n31 and permanent consulting may cost more than temporary consulting or teaching. The China Project provides a good example. China has a long-term need for a large number of draftsmen in many areas of law and many levels of government. Thus, it is likely that in the long-run the cost of teaching draftsmen will be lower than the cost of consulting. A very rough illustration of the effect of the anticipated or desired volume of products on the mode of knowledge transfer is demonstrated by the following three graphs.

#### A. The Consulting Curve

The cost of consulting is likely to remain relatively stable, regardless of the volume and repetition of the consulting services. n32 Therefore, assuming that the cost of a product produced by consulting (consulting unit) is three, a plot of the cost of consulting units will form a horizontal line. With volume, the consulting curve may slope down a bit as the cost of the information that consultants need about the transferees decreases. For example, in China's case, the cost of such information could fall if the consultants learn China's language, history, and environment. In general, however, the cost of consulting units will remain constant and the consulting curve will be essentially horizontal.

[SEE FIGURE IN ORIGINAL]

## B. The Teaching Curve

In contrast to the cost of a consulting unit, the cost of a unit produced through teaching (teaching unit) should decrease dramatically as a result of volume and repetition. As students acquire more skill, they start to act more like, and substitute for, consultants. Therefore, the cost reduction is likely to be gradual. Initially, teaching would be far more expensive than consulting. Eventually, with higher volume, the cost will begin to fall. At some point, the cost of teaching will equal that of consulting, and thereafter, when local talent begins to produce, the students' costs will be lower than those of the consultants. For example, assuming the cost of a teaching unit starts at nine and ends at two, a plot of the costs of teaching units will form a steep downward sloping line that eventually becomes horizontal.

[SEE FIGURE IN ORIGINAL]

## C. The Combined Curve

At some point, the cost of a teaching unit will equal that of the consulting unit. The costs will be equal where the teaching and consulting curves intersect (point A). In the following graph, the cost of the fifth consulting unit and fifth teaching unit will be three. As additional units are produced, the cost of the teaching units will fall to two, while the cost of consulting will remain at three.

[SEE FIGURE IN ORIGINAL]

## V. Teaching-by-Doing with the Aid of Consulting

### A. Purpose

The China Project provides an example of the combined mode of class teaching and practice, enhanced through the aid of consultants. The project is designed to combine teaching and consulting in order to achieve the goals of both modes and avoid, or reduce as much as possible, their disadvantages. Teaching-by-doing, however, is somewhat of a misnomer because the purpose of teaching-by-doing in the China Project is not merely to teach drafting by actually drafting, but also to produce effective legislation during the learning/teaching process.

Originally, the consultants were not engaged to write legislation, but to provide the Chinese draftsmen with information about foreign experiences. Put differently, the consultants were hired to reduce substantially the research effort and time necessary to gather the information about foreign experiences. The Chinese students were expected to learn how to draft legislation and to draft quality legislation. Because time was of the essence, and legislative draftsmen were needed, the consultants were supposed to support the students' "doing" by providing information.

### B. Disadvantages

#### 1. Inherent Conflicts

Two kinds of conflicts inhere in teaching with the aid of consulting. One relates to motivation: Teaching is used to enable the students to "do the services themselves." Consulting is used precisely to achieve the opposite result, to enable clients to avoid "doing." A combination of the two modes contains this germ of conflict.

Another conflict relates to the method. The combined mode of teaching-consulting results in neither optimal teaching nor in optimal consulting. Performing the desired task (e.g., drafting laws) may not be the most effective way to teach legislative drafting. As a teaching method, "doing" may involve a different kind of drafting, starting with simple "doing" and then increasing the difficulty and complexity of the "doing" as teaching progresses. Thus, "doing" must be fashioned to suit the teaching process and the student's qualifications.

The purpose of consulting is also not achieved optimally in the combined mode. The student's "doing" does not necessarily result in the polished product - the avowed purpose of consulting. It is unrealistic to expect an adequate finished product from "doing" during learning, especially at the beginning of the learning process. In China, learning to draft legislation by drafting complex legislation may initially produce poor bills. It may also slow effective teaching. Drafting laws for a complex society undergoing a fundamental transition is not necessarily the optimal way to teach legislative drafting; it may be too difficult. In fact, this task is difficult not only for the students but also for the consultants-teachers. That is because drafting for China requires knowledge and experience in the subject of the legislation; extensive research; and a grasp of the political and economic environment, both in other systems and in China. n36

As the role of the consultants reemerges, consultants are expected to help produce a polished bill, but not to draft it. n37 That process is not optimal. As teachers, consultants are expected to teach, but not to use the teaching mode. This process is not optimal either. Combining both modes of transfer fails to achieve the optimal goal of either teaching or consulting. What can be expected is simultaneous consulting and teaching in which consultants consult more, and teachers teach more, with a gradual reduction in consulting as the expertise of the student draftsmen increases. n38

## 2. The Ambiguous Status of Teacher-Consultants

The teacher-consultant's ambiguous status is demonstrated by the issue of his right to their work product. Usually, the teachers' materials and experiences are viewed as his property. Public policy encourages teachers to share their ideas and experiences through publications, and to that end, they are granted "academic freedom" and endowed with prestige. n39 In contrast, the work product of consultants is usually viewed as the property of the clients. n40 In addition, consultants (compensated or not) may not divulge to others information received from clients, except with the client's permission. The consultants may appropriate for themselves and transfer to others only the knowledge and understanding gained in the course of consulting, but not the particular information or resulting product.

The reason for the different treatment of the work product in teaching and consulting may stem from the level of compensation these two types of transferors receive. Consulting fees tend to be higher than teaching fees. Perhaps the teachers' proprietorship of the work product may constitute part of their compensation. In addition, in order to consult effectively, the consultants must receive far more information about the clients' affairs than the teachers should receive about the students' affairs. To encourage full disclosure by the clients, the consultants agree to treat the information as confidential and not to transfer the information to others (for compensation or otherwise) without the clients' consent.

When consultants act also as teachers, their status as to the proprietorship of the knowledge, the products they transfer, and the information they receive becomes ambiguous; their rights to publish ideas developed through the consulting process become unclear. Even if the product of the consulting is slated to become public (e.g., a law) the preparation of the product could involve access to sensitive political information and issues. This ambiguity can create a cost for teaching-by-doing with the help of consulting.

## C. Benefits

Notwithstanding these deficiencies, the combined mode may be optimal under certain conditions. The following subsections test the mode of teaching-by-doing with the help of consultants against the criteria for teaching and consulting separately.

### 1. Time

In the combined mode, the time necessary to draft laws may be shorter than the time necessary to teach draftsmen but longer than that necessary for consultants to produce the drafts. Consultants can substantially reduce the research time, especially if the draftsmen draw on their experience in foreign countries. Therefore, the combined mode provides a middle ground.

Further, where each transfer mode duplicates the other, it is possible to save time. Specifically, to the extent that consulting and teaching utilize the same information, methodology, and knowledge, the combined transfer mode offers time savings. For example, the method of teaching and consulting on legislation involves policy analysis and problem solving methodology: identification of the problems and the actors involved; explanation of the reasons for the problems and justification of the ultimate solutions; utilization of reasoned arguments to exclude alternative solutions; and proposed implementation of the suggested solutions. n41

In the China Project, the skills that the draftsmen acquire include policy analysis, and the drafting function itself includes this same type of policy analysis. Teaching-by-doing avoids this duplication and results in time savings. Similarly, in the China Project, information regarding the student-clients and China's environment can be used both in teaching and in consulting. If the same persons both teach and consult, the process can provide savings.

### 2. Loss of Autonomy

Combining modes of transfer may reduce the pool of potential transferees but provide benefits. First, because the skill level of students and clients may differ, student-clients may lack the right level of skills (too high or too low). Further, the combined mode limits the transferees to the type of persons who would agree to be students - making a greater personal commitment to learning and accepting a different power relationship with the transferor than they would make and accept as clients. Therefore, in a project such as the China Project, which combines teaching and

consulting, students and clients are not always the same persons. Students are younger officials, groomed for future authority positions rather than senior decision makers. Senior officials are likely to resist the role of students and are likely to feel more comfortable in the role of clients. Even if the senior officials wished to be taught, it may not make much economic sense to do so. Their cost to the government and the cost of filling their positions even temporarily is higher than the costs affiliated with younger students.

However, if students are also clients, the subservient power relationship of client-student is somewhat diffused and some of the disadvantages and costs of teaching are thereby reduced.

### 3. Cost of Monitoring the Transfer

Knowledge transfer by the combined mode may reduce the cost of monitoring the teachers-consultants. Students that could also be clients have a better understanding of, and sometimes greater experience with, the subject matter. They also tend to take the position of a monitor and focus on their role as buyers of expert services.

### 4. Information that Transferors Must Have

The greatest benefit from the combined modes of knowledge transfer is the reduced cost of general and specific information about the transferees because the local students are closely involved in the creation of the ultimate product. For example, the Chinese students' involvement in drafting the laws of China, reduces the cost of information about China, its history, culture, and political structure. The students understand what will and will not work in China. At the same time, they are exposed to new ideas that they can test in light of their background knowledge. Thus, the students' knowledge of the language and information about the environment and culture of the transferees constitutes the great benefit of a combined mode of transfer. To the extent the students engage increasingly in performing the services, this benefit increases as compared to consulting.

### 5. Cost of Employment

The cost of employing students is lower than the cost of employing consultants. However, students in the combined mode may be very costly if they are senior experts or government officials. The cost of employing the students therefore depends on their expertise and their progress.

### 6. Autonomy After Learning

The combined mode of transfer provides transferees with a greater measure of autonomy than does each mode separately. As students are "doing" more, their autonomy increases during the learning period and comes to full fruition when they have mastered the expertise presented. Thus, autonomy is gained during the learning process.

### 7. Volume

The marginal cost of the combined mode is similar to that of teaching, and substantially reduced with volume. In such a case, the combined mode is thus more attractive than consulting.

## VI. Conclusion

Knowledge transferees, especially from Third World countries, should choose a mode of knowledge transfer after carefully examining the costs and benefits of each mode. The choice depends on numerous factors, including the time necessary for the transfer, the skills needed for the ultimate product, the degree of the students' commitment, the power relationship between transferees and transferor, the cost of monitoring the transferor, the risk involved in the knowledge transfer, and the autonomy of the transferees during and after the transfer.

Although combining both modes of transfer may not achieve optimally the goal of either teaching or consulting in the short-term, the benefits from the combination can outweigh the deficiencies. These benefits may be enhanced by initially providing a higher level of simultaneous consulting and teaching and then gradually reducing the amount of consulting, as students acquire greater knowledge. In choosing the transfer modes, the volume of the ultimate product may be crucial. The greater the volume, the greater the benefits derived from teaching or combined teaching and consulting.

This Article offers a rough guide and tentative conclusions, based on an anecdotal experience. Further empirical research is necessary to reach more definite conclusions that could form the basis of a decision-making model. These tasks are left for another day.

**FOOTNOTES:**

n1. In this Article I use the term "knowledge transfer" rather than "information transfer" because "knowledge" focuses on the experience of the recipient of knowledge. See Kenneth J. Arrow, *Essays in the Theory of Risk-Bearing* 167 (1982) ("Knowledge arises from deliberate seeking, but it also arises from observations incidental on other activities."); Merriam Webster's *New Collegiate Dictionary* 646 (10th ed. 1993) (defining "to know" as "to perceive directly, have direct cognition of, to have understanding of, to recognize the nature of, to recognize as being the same as something previously known, ... to have experience of, to be aware of the truth or factuality of, be convinced or certain of, ... to be or become cognizant," and defining "knowledge" as "the fact or condition of knowing something with familiarity gained through experience or association," and stating that "knowledge [is] obtained from investigation, study or instruction").

"Information," on the other hand, focuses on both the source of the transferred knowledge and the actual transfer of that knowledge. See Merriam Webster's *New Collegiate Dictionary* 599 (10th ed. 1993) (defining "information" as "the communication or reception of knowledge or intelligence," and as "facts, data, [and] the attribute inherent in and communicated by one of two or more sequences or arrangements of something" (emphasis added)). Information can parallel knowledge, but can also be narrower - limited to facts and data.

For similar reasons, I describe a mode of knowledge transfer as "learning" and "teaching," rather than "training." Learning focuses on the recipient's active and voluntary acquisition of knowledge, generally by creating and discovering; training is designed to qualify people for a test or provide them with a skill by discipline and repetition. Training means the transfer of information in its narrower sense. It implies instruction, discipline (following orders), a measure of coercion, repetition (drill), and structure. A train represents something in line or even dragged (e.g., the end of a gown), or a moving file of persons. See *id.* (defining "training" as including "to direct the growth of (a plant) usually by bending, pruning or tying," and characterizing training as involving "instruction, discipline or drill"). For a distinction between training and teaching, see Meir Dan-Cohen, *Listeners and Eavesdroppers: Substantive Legal Theory and its Audience*, 63 *U. Colo. L. Rev.* 569, 591-92 (1992) (distinguishing between capabilities that operate with conscious awareness and those that are not as well as between cognitive and non-cognitive capabilities).

Although the China Project refers to the transferee officials as trainees, the Project involves learning. Legal drafting requires creative policy analysis that cannot be acquired by repetition and drill. Hence, the China Project and similar projects must provide knowledge transfer rather than only information transfer; teaching and learning rather than only training.

n2. See, e.g., Werner Z. Hirsh, *Privatizing Government Services: An Economic Analysis of Contracting Out by Local Governments*, Inst. Indus. Rel. (Monograph & Research Series No. 54 1991); B. Lentnek et al., *Optimum Producer-Service Location*, 24 *Env't. & Plan.* 467 (1992); Stanley C. Wisniewski, *Analyzing the Contracting-Out of Government Services: Relevant Cost-Benefit Considerations*, 11 *Pub. Budgeting & Fin.* 95 (1991).

n3. The project is conducted under the directorship of Professors Ann and Robert B. Seidman. Pursuant to the project plan, a number of Chinese officials attend classes on legislative drafting. In these classes they teach the officials how to prepare a legal memorandum that analyzes a proposed law. The memorandum is expected to: identify the problems that the law is designed to resolve; explain the sources of these problems; list possible solutions and criteria for choosing suggested solutions; and justify the final choices. After completing the classes, the officials meet with a consultant who is an expert in a particular area (e.g., education, banking, antitrust). The consultant discusses other countries' experiences in that area, noting comparable problems, explanations, solutions, and criteria for evaluating these solutions. Within a few weeks, the officials prepare a general memorandum of law outlining the proposed legislation for China. Thereafter, junior officials study at Boston University School of Law for a few months, taking courses, researching, and preparing a detailed memorandum of law for the bill on which they worked. These officials are then slated to teach legislative drafting to other officials in the future. The China Project places special emphasis on integrating the teaching and consulting modes of knowledge transfer. Not by chance, all consultants in the summer of 1992 were

lawyers, and ten of the eleven consultants were law teachers as well as experts in their particular area. See Ann Seidman & Robert B. Seidman, *State and Law in the Development Process, Problem-Solving and Institutional Change in the Third World* (1994); see also, Robert B. Seidman, *Justifying Legislation: A Pragmatic, Institutionalist Approach to the Memorandum of Law, Legislative Theory, and Practical Reason*, 29 *Harv. J. on Legis.* 1 (1992).

n4. This information is crucial both for consultants and for teachers to achieve their objectives. For example, in the China Project, students have far better knowledge than the transferors about China, the Chinese, their culture, history, and language. For Western transferors without knowledge of the Chinese language, and political and cultural environment, such information is very costly. In some cases, such as the transfer of information about heart transplants, the information is not so culturally related. However, even in such cases, the sophistication of the medical profession in the foreign country and the customs of doctors and patients, climate, and food, may play an important role in the knowledge transfer. See *infra* part III.B.2, 3.

n5. See, e.g., Kevin G. Coleman & Susan Watenpool, *USIS Activities in Support of Library Technology Development in Central America, Columbia, and Ecuador*, in 6 *Info. Access Co.* at 24 (Meckler Publishing Corp. 1991); Donna L. Gilton, *Information Entrepreneurship: Source for Reference Librarians*, 31 *Am. Library Ass'n* 346 (bibliography) (1992); *A National Information Network: Changing our Lives in the 21st Century*, 7 *Edge Pub.* (no. 230) (1992); Jane K. Meyers, *The Contribution of CD-ROM in Overcoming Information Isolation: Insights from an African Experience*, in 6 *Info. Access Co.* at 11 (Meckler Publishing Corp. 1991) (describing the introduction of CD-ROM information in Africa and other "information-isolated areas").

n6. I assume that the consultant's client cannot or does not wish to acquire the information on his own, or does not wish to exercise it currently.

n7. See *supra* part IV for a discussion of the combined mode of transfer using both teaching and consulting.

n8. Cost may be measured objectively in terms of money. However, it may also be measured subjectively. People value differently both money and what they receive for it. A person may find it less costly to hire a secretary than to learn how to type because he values his time and the cost of his learning effort more than the cost of the secretary's salary and the cost of depending on a secretary. Others may have different valuation measures. Their preferences may depend on age, education, self image, and available time, among other factors.

n9. I do not consider the payment of fees or compensation to either consultants or teachers because these payments can be factored-in with little difficulty.

n10. When teaching is combined with "doing" aided by consulting, the time necessary to produce the product may be shortened to the extent that the two functions are performed simultaneously. At some point, students who have honed their skills become experts.

n11. See George Fisher, *Cycle Time a Key Factor in Economic Competitiveness*, 14 *Financier* 37 (1990).

n12. It is easier to acquire typing skills than the skills of a general physician, and it is easier to acquire a general physician's skills than those of a heart surgeon.

n13. I take it as a given that the mode of transfer that allows for a relatively balanced power relationship between the parties should be considered less costly to the transferee.

n14. High deference to a teacher may be grounded in the respect for his expertise. In contrast, clients who engage consultants may view themselves as well educated in a field, but may have no desire to devote time or efforts to a project, and therefore they may wish to subcontract it. Hiring consultants in such a case is similar to buying a hamburger rather than cooking one. Even if you bought a great hamburger you would not view the chef at McDonald's with awe.

n15. The power relationship between teacher and student is affected by the society's culture. In some cultures, the differences in the relational power structure suggest that, to be effective, the teaching mode requires that students be relatively young, and not in a position of power. A consulting mode is more suitable for older clients in a position of power. This is especially important in a culture sensitive to positions and age.

n16. Some commentators suggest that consultants are not always effective. See Jaques Bousquet, *Experts Under Fire*, 6 *Prospects* 595 (1976) (suggesting teaching as one alternative to unsatisfactory consulting). Some suggest that consultants may not be honest. See *When Advice Is A Rip-Off*, 112 *South* 42 (1990) (stating that "the great consultancy rip-off is costing cash-strapped developing countries, particularly in Africa, many millions of dollars [with little effect]"); Moses N. Kiggundu, *Outside Consultants: Dilemma for Developing Nations*, *Bus. Forum*, Summer 1989, at 23.

n17. Because of risks that knowledge transferors pose to transferees, some knowledge transferors could be viewed as fiduciaries under U.S. law. See Tamar Frankel, *Fiduciary Law*, 71 *Cal. L. Rev.* 795 (1983).

n18. Although non-experts seek consulting (e.g., patients seek expert medical advice) in many instances clients are knowledgeable and even expert (e.g., physicians, lawyers) or are persons with experience in using experts (e.g., business people using the advice of lawyers). Such clients may have tried to solve the problems themselves before calling for a consultant's help, and are able to determine what and how the consultant should perform.

n19. Transferees can reduce the transferor's shirking and conflicts of interest by ascertaining the optimal quality of the product. For example, they can engage other experts to evaluate the process and results, or obtain guarantees for, or testing of, the end-product. Such a test is less accurate for teaching than for consulting because the quality of the teaching product depends not only on the ability and commitment of the teacher, but also on the ability and effort of the student. Generally, the more power and discretion the teacher or consultant possesses, the higher the expectation will be that he will produce results, rather than merely transfer knowledge.

n20. Combining teaching and consulting may reduce the cost of the process. At worst, the combined mode presents the sum of the monitoring costs of each mode separately. But if all or some students are also clients, their combined expertise may reduce the monitoring costs as compared to monitoring costs by separate groups. For example, I believe that the monitoring costs of the China Project are relatively low because both the students and clients are sophisticated, they are members of the same group, and they have access to alternative expert advice (e.g., the World Bank).

n21. See Dwayne Hood, *Training as an Investment*, 5 *Nashville Bus. J.* 29 (1989) (stating that U.S. firms find that training employees is necessary to maintain a competitive advantage); Fussaku Yukiko, *Origins of*

Japanese Industrial Research: Prewar Government Policy and In-House Research at Mitsubishi Nagasaki Shipyard, 21 Res. Pol'y 197 (1992).

n22. See Francis McGowan, The Development of Orimulsion and Venezuelan Oil Strategy, 18 Energy Pol'y 913 (1990) (stating that Orimulsion has developed by combining technology transfer to maximize autonomy with collaboration in marketing).

n23. The United States, for example, has subsidized shipping for decades on the ground that the country should have an independent merchant marine to support the navy in wartime. See Richard A. Carpenter & John A. Dixon, Training as a Component of the Consulting Contract, 4 Environmentalist 229 (1984) ("Eventually ... the developing countries must be able to do their own assessments and provide continual guidance to economic planning and management.").

n24. In addition, there are analogous situations that may help determine the economic value of independence, related to the needed volume of the transferred knowledge product.

n25. See Fred Rosensweig et al., Consulting Overseas, Performance & Instruction, Feb. 1988, at 23.

n26. As a corollary, the costs of information depend on whether transferors have or can acquire the information easily. See Richard L. Duncan, Reflections of a Development Adviser, in 25 Culture & Evaluation 37 (Michael Q. Patton ed., 1985) (emphasizing the difficulties of consulting in developing countries stemming from a lack of understanding of the institutional arrangements).

n27. It is important for the consultant to obtain the reports of prior consultants and materials used in those prior consultations. After arriving in China, I discovered an excellent 1989 report containing suggestions as to the financial system. The report, however, was very theoretical and general, and some of its proposals were not yet adopted even in Western countries. Knowledge of the existence of the report, however, would have affected my preparations.

n28. Some of the difficulties in China relate to the law-making process, which is expected to produce full consent by all government departments sometimes at different levels. Another difficulty involves fitting solutions into China's evolving political and ideological framework and translating these solutions into legislation.

n29. Compared to teachers, consultants are likely to impose a higher cost of prior information.

n30. The two modes require similar support information only to the extent that the skill necessary to produce the ultimate product may involve a similar analysis. For example, policy analysis is necessary for drafting legislation and for teaching drafters of legislation.

n31. There are many horror stories of gifts (e.g., ships) to underdeveloped countries that required high technical knowledge to operate and maintain. Such gifts remained mostly idle because of minor maintenance problems that no one knew how to correct once the experts left.

n32. Economies of scale from consulting are likely to be small and the costs of consulting in terms of information about the transferees and their environment are likely to remain constant, and high as compared to teaching. See *supra* part III.B.2.

n33. See, e.g., Damian Rinaldi, *Outsourcing: Threat or Opportunity?*, 13 *Software Mag.* 58 (1993) (suggesting that even if a company decides to "outsource" the service (use a consultant) the person responsible for information services in the company should try to engage internal staff in the project in order to obtain technology transfer for future use and independence).

n34. Thus, in the China Project, consultants are used so that the clients-students will not have to spend the time necessary to research the experience of other countries in a particular area of law.

n35. Similarly, a student, at the initial stages of learning a language, should not be required to "do the language" by writing poetry or expressing complex ideas. It is more useful to ask the student to "do" the language by making simple statements like, "how do you do," "thank you," and "where is the bus station?" Further, some people learn by doing part of a skill first, like writing or speaking.

n36. It would be difficult enough for an experienced draftsman to undertake drafting for China. It is even more difficult to do so while teaching his Chinese colleagues.

n37. Consultants can also provide expert and innovative advice. For example, China and Eastern European countries undergoing fundamental changes need innovative consulting, not merely advice such as, "copy what we do," or worse, "copy what we theoretically and ideologically believe is optimal."

n38. In addition, there always looms in the background the consultants' possible conflict of interest - the desire to continue the clients' dependence by limiting the knowledge transfer to clients.

n39. In this respect, the China Project consultants' contracts with the Chinese government were modelled after consulting, not teaching contracts. When the consultants in the China Project considered the possible publication of a book describing their experiences, they received permission to work on a book on the condition that the Chinese authorities will have a right of veto. For an academic, this is unacceptable "censorship." For a consultant, this is a clear client entitlement. In fact, without the client's consent, the consultant may not publish anything related to the client's case that is not already public (and sometimes not even that) including the fact that the relationship exists.

n40. I exclude consulting through publications, such as investment advisory letters.

n41. See Ann Seidman & Robert B. Seidman, *supra* note 2, at 265-77 (1994); see also Robert B. Seidman, *supra* note 2, at 1 (1992).