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ABSTRACT

An interview with Dr. William DeJong, editor of "School Construction News," is presented concerning his thoughts on new teaching models, the advent of computers, and the media hype surrounding school safety. Dr. DeJong addresses what the space requirements are for departmentalized versus interdisciplinary education; what problems he sees affecting elementary schools differently versus high schools; why the high school level was the most resistant to the interdisciplinary approach; what types of materials and furniture he specifies when designing classrooms for block scheduling; how different instruction methods are changing the way he designs elementary schools; how the demographic shift of students from elementary schools to high schools, as a result of the Baby Boomer's children growing older, is now focusing higher construction levels on high schools; whether economic trends will impact school building; and what types of design elements he is using to enhance the safety of schools. (GR)

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DeJong

The Future of the Classroom

Q & A with William DeJong, April, 1999

By Eric Butterfield

Dr. William DeJong, Ph.D., REFP, president of DeJong & Associates of Dublin, Ohio, has over 20 years of experience in education and facility planning. He served as president of the Council of Educational Facility Planners International (CEFPI) in 1993-94, and was awarded CEFPI's "Planner of the Year" award in 1991.

In addition, Dr. DeJong is involved in Heart to Honduras, which is helping build schools for that country's poor, rural communities through voluntary work.

In this interview, Dr. DeJong addresses new teaching models, the advent of computers and the media hype surrounding school safety.

What are the space requirements for departmentalized vs. interdisciplinary education?

At the high school level we're in a mode of transition, whether we're going to stay with the old 1950s model, the departmental model, or if we're moving more into some type of teaming or interdisciplinary model, which seems to be more of an information-based model. The model that we had was more of an industrial model-it's all set on certain fixed schedules and certain defined kinds of spaces.

Here's the bottom line: I don't know which way it's going to go in the long run, but you can't take a departmental model school and convert very easily into an interdisciplinary model school, because basically a departmental model school has all the disciplines segregated. So it has your business curriculum in one area, your English curriculum in another area, and your science curriculum in yet another area.

"We need to look at a concept in which every student has a computer."

However, what we have found is that you can use an interdisciplinary approach and still operate it as a department. A lot of the interdisciplinary approach is breaking these schools into smaller schools, and they go by a lot of different terms: clusters, houses, academies. You could take a cluster and turn it into a math department, or turn a house into an English department, but what we found is that there are obviously some problems areas, like with the sciences: do you decentralize sciences or keep it all in one area?

We started that whole discussion in about 1991. A large number of high schools are being developed now on more of an interdisciplinary model, or at least with the flexibility to go in that direction.

I've never seen, in the 27 years that I've been in public education, the amount of school construction that's going on in this country.

As a result, I personally think that there is a lot of short-cutting going

on and a lot of people are not really taking the time to think through what the school of the future should be. What they're doing, basically, is building a lot of the schools of the past but it looks a little bit better and has the technology thrown in. I think it's a real problem because everybody needs everything yesterday and a lot of times I don't think there's sufficient time being taken to do the programming and visioning that's necessary when looking at how education should operate.

Do you see these problems affecting elementary schools differently vs. high schools?

I think there are a lot of problems at all levels because there's so much change going on. I really think the problem is a matter, partly, of time.

In Charleston, South Carolina, they passed a $175 million bond referendum. And they are scrambling right now trying to figure out what to use those funds for and how to get renovations done as quickly as possible. There's no question that there are major questions there with stopping the leaks, fixing the windows and healing the HVAC system. But if you're going to do a major renovation of a school, you really have to get into a dialog about how education is going to be delivered and what kinds of programs and services are going to be needed.

All of these buildings-'50s, '40s, '30s, '20s-are pre-OPEC, they're before energy conservation, they're pre-ADA (Americans with Disabilities Act), they're pre-technology (before the advent of computers), and they're pre-current programs and services. Even at an elementary level, most of those elementaries when they opened never had a special ed. area; they never had computer classrooms; they never had gifted and talented; they never had separate art rooms or music rooms; they never had the science emphasis at the elementary level like they do now.

> "I've never seen, in the 27 years that I've been in public education, the amount of school construction that's going on in this country."In one of your articles, you mentioned that the high school level was the most resistant to the interdisciplinary approach."

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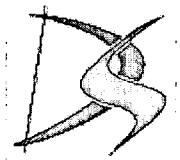

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The Future of the Classroom

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In one of your articles, you mentioned that the high school level was the most resistant to the interdisciplinary approach.

I think the high school level has been the most resistant to change, period. And I think part of that is that high school teachers are certified based on subject matter certification, whereas an elementary teacher is certified as an elementary teacher-they're not certified as a math or an English teacher. As a result, you find the elementary and middle school people more open to change than you find at the high school level.

Since that article was written, this whole country has gone into a major change at the high school level of looking at block scheduling. Five years ago, I would have never guessed that as many high schools would have adopted block scheduling as we currently see. Most high schools are scheduled at six or seven periods per day. At block schedule they're scheduled at four periods per day.

The idea is, when you only have 50-minute periods in a school day, by the time you've taken attendance and reviewed what you did yesterday, there's such limited amounts of instructional time.

When you take a block, now you basically have an hour and forty-five minutes, maybe even up to two hours in a block, you can really start getting into the depth of that subject matter much more than you can in a traditional schedule.

Also, there are fewer passing times. You're only switching class three times a day instead of six times a day, so there's more instructional time.

When you look at academic achievement, lecture is one mode of learning but a more effective mode is hands-on, project-based, more experiential-based learning. So we have a problem here, a dichotomy at the high school level.

A lot of times when you go into a kindergarten, you say it needs to be 1,200 square feet. And I go into the discussion as to why does that have to be 1,200 square feet because the kids in the kindergarten are much smaller than the kids in high school. Yet when we go high schools, a lot of time we'll go around the country and find a high school classroom to be 700 or 800 square feet. Well, the problem is, at a kindergarten there is more diversity of activities: a sand box area, reading group areas and places for naps, and all these different things going on in the classroom, and as a result we need more space.

Guess what? At high schools, as they start embracing block scheduling, 700 or 800 square feet works fine if all you're going to do is lecture to 25 kids in rows. But if you're going to have these kids working on projects, working in teams, 800-square-foot classrooms aren't going to do the job.

When you design classrooms for block scheduling, what types of materials and furniture do you specify?

One of the things that we're seeing, whether it's in the classroom or

adjacent to it, is a lot of small group conference areas. In a lot of cases, we're seeing a conference room for four to six people that may be adjacent to a classroom where groups of kids can work on a project and have a level of privacy. A lot of times for security purposes, you glass those areas in.

Instead of the desk and the chair, we're seeing tables and chairs. What we've done a lot of times is relegate the technology to the back of the classroom by putting in a place for a half dozen computers.

Especially on new schools, we're looking at floor pockets for cable hookups. We're already working with some schools, like in Beaufort, South Carolina, where they're beginning to issue laptop computers to all sixth graders. So this whole issue of looking at four to six computers per classroom-forget it. We need to look at a concept in which every student has a computer. And I don't think that's going to be a fixed computer, what that's going to be is a laptop. So there's been a lot of debate going on whether we should have computer labs in schools or is that just a stop gap measure. And it is.

Twenty years ago there was only one computer for every 125 students. In 1995 it went to about ten to twelve students per computer. We're pushing a situation that by the year 2000 I think we'll probably be at a ratio of about four students to a computer in most schools.

Just jump that one step further: Look at every kid carrying some sort of laptop whether it's in a backpack or whatever. Think of all these kids walking in schools with laptops-they're going to be looking for data ports in hallways, they're going to be looking for electrical hookups in cafeterias, in libraries, media centers-all over the place. They're going to be looking for some kind of Internet connection off a school bus. Anyplace they can plug in.

Once a decision has been made to build a new elementary school or do a major renovation of a middle school, there's a whole programming phase that really needs to take place to really think through these kinds of issues.

"One of the things that we're seeing, whether it's in the classroom or adjacent to it, is a lot of small group conference areas. In a lot of cases, we're seeing a conference room for four to six people that may be adjacent to a classroom where groups of kids can work on a project and have a level of privacy."

How are these different instruction methods changing the way you design elementary schools?

The classic elementary school, the double-loaded corridor-those buildings do not lend themselves to doing these other methodologies.

In Mason, Ohio, near Cincinnati, they built a new middle school and switched from the junior high industrial model into a middle school philosophy.

They just built a huge elementary school of 1,200 students. It's four schools within a school. In their school system, within a school, parents and teachers have the choice of whether they want to teach in a self-contained environment, which is the kind of environment you and I went to school in, or if they want what's called a "looping environment," which is where two teachers work together with a first grade class and a

second grade class. They team teach and the kids are in that class for two years.

The third model is a multi-age model. Sometimes what you're seeing is kindergarten, first and second grades in a multi-age model and that may be only for a single year-it's almost like a non-graded type of environment.

Then there's the grade-level team. Let's take a second grade where three teachers work together. One may be really strong in mathematics, another in science, the third really strong in language arts. They may take 75 kids and work together to figure out at what time what kids need to be with what teacher.

In Mason, Ohio, they have three schools like this. In five years, these have gone from average schools to the top performing schools in the state. The point is that we need to build more and more choices and options within the public school itself.

Let's take a look at space ramifications. In some cases, if you have a self-contained method what you really need are classrooms and it really doesn't make any difference because it's just a teacher in a classroom.

In the "looping" we have two teachers that are going to be working together, so these classrooms really need to be interconnected, possibly even a moving wall or even some way to move between those classrooms without going into the hallway.

With multi-age or a grade-level team-a lot of these elementary schools are being built now in pods and provide that flexibility. The double-loaded corridor does not provide that flexibility.

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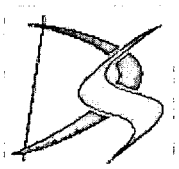

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As far as construction levels, hasn't the demographic shift moved from elementary schools to high schools in the '90s with the Baby Boom echo?

Yes, there's no question, the emphasis now is on high schools. But the fact of the matter is, there's such an emphasis on all three levels. At the elementary level, you have a bunch of buildings that were built in the '50s and only built for thirty or forty years, and now we're in the '90s.

So even though you may not have the same kind of overall growth at the elementary level that we were having ten years ago, we're still having a major emphasis on elementary in either major renovation or replacement.

Then you have the demographic issue. There's been a twenty percent decline in birth rate in this county since 1991. And that's going to have an impact on our elementary schools starting now. You're going to really see it heavily in the next five years or so.

You really have to look at all these demographics locally. You can get into things like [a fully developed city] and it probably will get hit with another round of decline while the outlying areas being built are going through rapid growth. In the next ten years in K-12 education where we'll be simultaneously managing growth, managing decline and managing a status quo. And I think it's going to cause tremendous confusion with the public.

> "The number one problem I see in working with communities is helping them to create a vision on what they want their schools to become. Once they have that kind of shared vision, they're willing to support it."

Are there any economic trends you think will impact school building?

For the first time, we're really getting into major discussion about the urban school issue. The dollar tags are unbelievable. We have a team up in Detroit right now. They have a $1.5 billion bond issue that they're trying to roll out. Those types of numbers are astronomical.

But I think we're going to see more changes in the delivery system as far as lease/purchase arrangements and private holding companies. We're seeing more in the urban areas as far as charter schools, and I think the real question in the urban areas is going to be who is going to run the school system in the future. I don't personally think money is a problem. The issue in a lot of local communities is a lack of vision. Don't get me wrong. I understand that there is a lot of discrepancies from one district to another district all through America as far as what kind of resources are available.

The number one problem I see in working with communities is helping them to create a vision on what they want their schools to become. Once they have that kind of shared vision, they're willing to support it.

> "I really believe that 80 percent of the security issues in schools can be handled by design."

What kind of design elements are you using to enhance the safety of schools?

First of all, there's a real fallacy about the security issues and problems in schools. It's a media hype. When I'm working in the inner cities and ask the kids, "What's the safest place in your community?" You know what they're going to tell you? The school. The problem often is going to and from school-it's in the neighborhood.

I really believe that 80 percent of the security issues in schools can be handled by design. The number one problem with a lot of schools being built or under design is that they're not laid out right-there are a lot of nooks and crannies; it's not easy to supervise the building; there's not a general sense of where kids belong. Just the basic layout of the building would solve a major portion of the security problems that we've encountered.

The second thing is a lot of use of interior glass. Just by putting in some glass, you can observe from one area into another. For instance, glassing in reception areas and administrative areas-immediately you can supervise the hallways, the front entryway, etc. We're seeing a much more limited budget all the time, so we're not going to get a bunch more staff.

Once all that's done, now you can look at the active elements like security cameras and stuff like that. If you attack the technology needs of a building from an educational basis, you're probably going to put in data ports, video monitors and phone systems all over the building. Once you have that in, think about how those can also be used for security purposes.

It takes almost no effort to jump off that system and put motion detectors in classrooms that not only control intrusion issues but can also control lights, heating, etc. What I'm seeing is a massive effort to put technology in for security, and security really ought to be the secondary emphasis, not the primary emphasis. I see all this technology going in to support a security system, and then I see a parallel technology system going in to support the instructional system. What a waste that those two systems can't be integrated-you get a much bigger bang for the buck.

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