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**Preparing Teachers of Technology:
A Response to Gagel's NAITTE Membership Survey Report**

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The executive committee of the National Association of Industrial and Technical Teacher Educators (NAITTE) under the leadership of Charles Gagel is to be commended for conducting the 2004 membership survey. Gagel has presented a clear interpretation of the survey results together with some organizational demographics. Although there were good reasons to conduct this survey, it was a task that could have been ignored and left for someone else. That can easily happen in organizations such as NAITTE, which function entirely with volunteers. The fact that the need for a survey was not ignored, demonstrates the competent, dedicated leadership characteristic of NAITTE.

In writing a response to Gagel's report it is only fair that I first reveal some of my own bias. I have been a member of NAITTE since 1964. I was first brought to a NAITTE general session by my department chair, Dr. George Brandon, who also introduced me to many NAITTE members. It quickly became apparent that this was an organization that suited me. This assessment has remained true throughout my career. Through active participation in NAITTE, I have enjoyed many benefits and forged many professional relationships. Now as a professor emeritus I have the opportunity to observe secondary school laboratories as I supervise teaching interns. And, with the perspective of one who is no longer burdened by day-to-day tasks of the field, I have the privilege of taking a broader view.

The NAITTE of tomorrow cannot be the NAITTE of the past. Gagel's conclusion is clear, NAITTE must change if it is to survive, and many of us believe that there are good reasons for a teacher education organization to be part of the field that we profess. However, that field is not the same as it once was. This seems to be at the heart of what NAITTE is experiencing. The

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goalposts have been moved but we are still kicking the ball in the same old place. If the issue of what constitutes the field is not addressed, other proposals for change amount to tinkering. Of course, the direction in which NAITTE should change in order to accommodate the new playing field is not entirely clear, especially if changes are to serve the future and not just represent the present.

The demand for elementary and secondary school teachers of technology, as we have traditionally known them in the past, has diminished and has resulted in the reduction our teacher education programs and, consequently, the NAITTE membership base. Recent leadership for NAITTE has arisen from new places in addition to those we have relied on in the past. Some faculty members who have had leadership roles in NAITTE now are employed at universities that no longer prepare teachers. This is true at both Land Grant universities and original teacher colleges. As some teacher education departments bolstered their enrollments with industrial technology programs, teacher educators were gradually replaced by faculty members who were more focused on engineering and technological processes.

Despite these changes, the need for teachers who can prepare students for life in a technological society continues. There are many reasons for teaching technology in today's culture. Some of these reasons have to do with economics, both income producing and income saving. Some instruction in technology is intended to develop skills and knowledge immediately useable for employment. In some other cases, such as developing technological literacy, the intended purposes may be less specific. Whatever the intention of the instruction, teachers of technology are required. However, changes in the use of technology in the home and workplace have altered both the teaching and the learning in our field.

There are teacher educators not often considered to be partners with whom we might join together. How can this benefit NAITTE? It can broaden the population of prospective teachers who enroll in technological teacher education programs, thereby helping to stabilize the number of teacher educators. These future teachers will bring additional, enriching perspectives to what we do. And by enlarging our base, we can more fully realize what we

have long advocated—that is, for many students the study of technology is a route to learning other skills including mathematics, science, and communications. We should not underestimate the value of the analysis, organization, delivery, and evaluation methods that we use.

We should consider partnering with teachers who use technological processes to teach basic life skills to special populations of students. Often these are students who have not succeeded in conventional school settings where their learning styles may not be adequately addressed. If they are socially alienated from school, they may choose or be required to enroll in alternative forms of education. The teachers of these students may be classified as technology, career, or special needs teachers. Because we prepare teachers to direct student learning through hands-on learning activities (that may even appear to be chaotic to teachers in some other subjects) the pedagogy that we employ in our preparation of teachers can serve these alternative-school teachers well.

We should also enter into discussions with our colleagues in agriculture. Agricultural education in secondary schools is education in technology, particularly if outcomes are examined. The teaching of production agriculture (e. g. soils, crops, livestock) no longer draws many high school students. Present emphasis is on farm buildings (construction), fabrication and repair of agricultural equipment (manufacturing), power utilization and maintenance (power and energy), agribusiness, and biotechnologies including horticulture and aquaculture. In addition, technologies such as global positioning are being put to practical use. The extra curricular activities of agriculture and technology education are also compatible. Student organizations exist in both areas with several types of intra- and inter- organizational competitions that engage many students' interests. Can our traditional differences be addressed in order to achieve a more encompassing goal that benefits both disciplines?

A third example of an opportunity for NAITTE is in workforce education, often called skill training. This is an area of training often passed over by human resource development (HRD) professionals. It may not have the glamour of team building, conflict resolution, or executive development, but it

often is critical to the economic well-being of an organization. Further, it is “right down the alley” of teacher educators in technology. There are many employer associations and labor unions that make substantial investments in the workforce training. Well-trained employees provide a competitive advantage both to the workers themselves as well as to their employers, and a key to successful training is having competent trainers who have learned to teach from educators like us. Our forte has been in analyzing and organizing subject matter, presenting technical content, and evaluating learner performance. Including workforce skill trainers (although they do more than teach skills) in our programs will increase our student base. And, because many trainers are actually trainer educators in that they prepare subject matter experts and others to be more effective trainers within their own places of employment, they are potential NAITTE members. Several years ago a division was added to NAITTE for industrial and military training, but we have had limited success in attracting individuals from this sector of education. We may not have understood HRD well enough to recognize the niche where we fit. It would be a good idea to look at some institutions, such as Purdue University and the University of Tennessee, that have prepared trainers and training managers for joint apprenticeship programs and other union-employer sponsored training, to help locate this niche.

There appears to be little resistance among NAITTE members to the reshaping of the organization whether by merger or incorporating other teacher educators. The time has come to make something happen. In planning for the future of NAITTE, or whatever a successor organization may be called, it is wise to go beyond the present mission statement to some guiding principles and to clarify what it is we stand for. For example, we are committed to an organization that

- engages in the preparation of teachers of technology without regard to professional title, teaching setting, or intended learner application
- supports research related to practice in teaching technological content through the exchange of critical ideas and the publication of research results

- provides for professional contacts among colleagues across geographic boundaries and specializations
- accepts and encourages new entrants irrespective of prior experience and orientation with recognition that the desire to join represents a shared interest
- continually reexamines its role with the intention of adjusting to the changing context of teaching technology
- respects differences of opinion and interpretation and provides a forum for debate free of ridicule or retribution
- encourages the expression of novel as well as tested ideas.

A set of guiding principles may help NAITTE to communicate to members and those who would be recruited exactly what it is about. In addition, it will help NAITTE members and representatives of any other organization or teacher educator group to identify and discuss issues of mutual interests.

The need for NAITTE to become more inclusive and to join with others who are engaged in the preparation of teachers for living and working in a technological society is embedded here. An early step in doing this is to remove barriers within NAITTE itself. Divisions of NAITTE which once served to facilitate communications with divisions of AVA (now ACTE) are now an obstacle to unity needed within NAITTE. An organizational structure that provides for unification will make it easier to move on to the next step and will help to clarify NAITTE for those in other fields of teacher and trainer education.

In joining with any other teacher education group the sociological principles that make a group function as a unit need to be respected. The importance of shared purposes and principles among all partners should be held high. Therefore NAITTE should know itself and prepare to move forward. NAITTE need not come from a position of weakness. We have many assets as attested to by the dedication and leadership within the organization, by its professional collegueship, and by its tradition of inquiry.

It seems likely that, ten years from now, another survey of our members will reveal a NAITTE comprising a broader teacher education organization. NAITTE should actively work to form and strengthen this broader organization. Rather than feel shamed by this prospect, we should proudly carry our heritage into the next phase of preparing teachers of technology.