In this Introduction I will refer to the changing context in which distance education research occurs and point out some of the broad directions for our research agenda. 

These observations are based on years of following trends in distance education research, especially since 1986 as Editor of ajde and for ten years before that, i.e. 1976 at TAAD/Open Learning.

I am very conscious of this being a very North Atlantic perspective. While NA literature is not necessarily representative of world-wide trends, it is quite likely that there is a relationship with directions and patterns of what develops elsewhere.

I have also reviewed the papers or abstracts that I was given for this First International Conference on Distance Education in Asia and the discussions on line preparatory to the conference and tried to take into account what I saw there.

The first things I should comment on is the increasing volume of research papers being generated worldwide.

The next is the wide range of topics that purport to be about distance education.

Then one must comment on the variability in quality.

Which leads me to my first contextual variable:

1. Research will be in a context in which conceptual confusion prevails.

Strikingly there is considerable ignorance among many researchers about what is already known about distance education is.

It seems that everyone with an interest in the Internet in education say they are in distance education and many believe they are entering unexplored territory. They have little or no idea where their work is related to what is already known, or where it connects with other work in the field.

The minimum that every researcher hoping to be published in a reputable journal must do is to review related research to the question being asked.

Without that, the data gathered is of little general use. A more sophisticated approach is to relate the research question to one of the generally well recognized theories, which are themselves syntheses of previous research, validated over time.

A good place to begin to look at these would be Keegan’s book on distance education theory.

I was pleased to see the exchange about concepts between Bill Fraser and Prof Paprock on-line, particularly when Bill included "telematic education", a term I tried to introduce in my original 1972 paper on concepts which seemed for a long time to obtain very little acceptance. I guess if you stay around long enough you can win in the end! He also introduced “autodidactics", which also featured a lot in my early work. You may not
realise that thirty years ago before we invented the term “distance education” we were discussing these matters under the rubric of “independent learning”, which is what led me to the idea that learners who were not in a classroom were independent not only by distance but also in the degree to which they exercised control, or autonomy in their learning. I hope we can discuss these and similar theoretical ideas during the next few days.

**Needed projects**: continuous syntheses and reviews of literature, as well as testing and up-dating of established theories known. An excellent example is Insung Jung’s analysis of literature on Web-based instruction according to transactional distance theory.

(By definition, distance education consists of all forms of education in which the learner is normally for all or most of the time in a different place from the teacher so that the normal media of communication are the printed and electronic media. The emphasis in this definition should be on the words "normally" and "education", since use of technology where students are normally not separate from their instructor can be excluded from our discussions and use of technology that is for purposes other than the deliberate planned learning that is supported by an instructor or instructing agency is also excluded.)

2. **Research will be in a context in which there is a huge increase in the number and variety of institutions offering programs of distance education and in which the core mission of distance education is changing.**

In the USA the next two years will see 85 percent of colleges offering on-line courses to over 2 million students. The for-profit sector already has some 3 million people in such programs.

New companies with names like Hungryminds, Smartplanet, and eHigherEducation) and SmartForce are being set up with the aim of delivering training exclusively on-line. Some for-profit institutions like Jones International University and the University of Phoenix are competing with institutions that offer credit courses and degrees. Over 1000 corporations have set up their own in-house on-line training programs

Some public institutions are entering the for-profit field themselves. The University of Nebraska at Lincoln for example has created a for-profit company called Class.com to provide distance education to high school students.

The mission of these new institutions is different than the old.
The core mission of distance education since its invention in the 19th century has been to open access to those who were denied opportunity in the conventional systems, especially in higher education.

It seems that this mission to reduce inequality does not pre-occupy many of today’s providers -- who regard on-line distance education as a consumer commodity. It can be bought, if one has the purchasing power, but is inaccessible otherwise. Not only is distance education no longer able to achieve its traditional goal of narrowing the gap between those with greater knowledge and those who have less, but in the on-line era will probably contribute to widening it.

Suggested projects: to carefully examine the stated missions of institutions, to compare them with their practice, to compare with historical practice .. to identify changes. Historical research to bring to awareness the important part played in the past in distance education as an agent of equalising and opening opportunity.

3. Research will be in a context in which it is necessary to distinguish among different organizational types.

The organizational structures within which distance education research occurs is changing, but older models are not necessarily replaced, but co-exist in changing form with newer models.

In the first half of the last century research was conducted in dual mode institutions by pioneers like Wedemeyer and Childs. This was followed in the 1970's and 1980's by national Open universities with well endowed institutional research departments.

I would mention here Holmberg’s criticism of Open University institutional research. Often it is, he says, of very little value other than for administrative purposes, with open university researchers acting primarily as an auditing body that checks on the effectiveness of resource usage.(Holmberg, AJDE 1987, p16)

This is a type of research that I will call "show and tell" that describe the program of a particular university or department, in which authors tell about their adventures in using communications media to link teachers and learners. The main feature distinguishing one of these reports from others may be the communications medium employed or the population served. Since there is usually no relationship to literature and theory and the research methodology is weak, the findings of these reports cannot be generalized beyond the particular institution. When the experiences that are reported in these papers are based on systematically collected evaluation data, they can be a source of useful ideas for other institutions and individuals, and they are also, of course, important for the on-going work of the individuals and institutions involved.

A large number of papers submitted for the conference are program "show and tell" reports.
In North America with the notable exception of Athabasca University, we had no open university … during the 1990's we experienced an explosion of interest in ways of applying teleconference and then internet technologies in dual mode systems. Most North American research is in the context of this model of "extended class" or "extended teacher in dual mode universities.

Now we have the emergence of the Virtual class and the Virtual University where learners receive instruction from a variety of sources. As a result we are moving towards learning that is not only at a distance, but is independent of any institution. There is very little research attention to this modern form of self-directed, highly autonomous learning.

It is very important that we have wider understanding of the comparative advantages of the different types of organization.

Projects: Analyses of institutions and organizations to identify differences in such variables as design procedures, learner support procedures, funding, human resources, leading to the construction of typologies that would enable everyone to clearly understand what type of organization is being examined in any particular instance.

4. Research will be in a context in which all forms of interaction are available on one delivery platform.

New technology relieves distance teaching institutions from the need to construct packages of text media, audio and video media since -- with enough bandwidth -- it delivers these on one platform. The application of these media in both presenting information and facilitating interaction are also on the same platform. As before though the challenge is to design programs so they benefit from the relative strengths of each of the media. This idea of selecting media for specific content and pedagogical purposes remains vitally important and our goal as researchers must be the assembly of a body of knowledge that helps practitioners make such rational selections.

A contribution here from Bill Fraser who wrote: “There is one issue we have to consider very carefully when developing materials for distance education and going about selecting the "most appropriate" delivery system. The two issues which should actually prescribe which medium to select are the substance and syntax of the science (arts, English, maths, etc) we are dealing with. The substance (epistemology - terms, concepts, facts, laws, etc) and the syntax (science process skills: observation, measurement, analysis, experimentation, etc) demands their own requirements in terms of delivery, and students could become very sensitive if these requirements are not met.”

Questions:
An important research question is:
For what kind of student, in what particular content, are different levels and types
of interaction and necessary?

5. Research will be in a context in which the demographics of the
student population are changing and this will lead to change in what is
delivered in the educational system.

In US between 1970 and 1997 while the traditional age population declined, adult,
part-time enrollment increased from 3 million to 6.2 million.

Part time enrollments grew by 180\% compared to 44 \% for full time enrollments.

The number of women enrolled rose from 1.2 million to 3.6 million.

Nearly half of all minority college students enroll part-time. More than 325,000
learners aged 65 or over participated in college programs (University Continuing
Education Association, Lifelong Learning Trends, 1998)

6. Research will be in a context in which there is considerable
knowledge but still not enough, regarding learner characteristics.

Research in programs using new technology confirms that student achievement in
such courses is equal or superior to students enrolled in traditional courses.

Here I should mention Prof. Ken Paprock’s contribution in which he refers to
Russell's book "The no significant difference phenomenon. Russell reported 355
research reports, on comparative research and said there were no significant
differences.

As Cookson said in the on-line discussion, So what?
Since there have been such studies of comparative effectiveness for at least 60 years,
(i.e. comparisons that found correspondence to be as effective as face-to-face teaching)
we know that between group differences are of no importance. Dubin and Taveggia
should have said the last word on the subject when they wrote, in 1968, "The results of
this research are clear and unequivocal--no particular method of teaching is
measurably to be preferred over another when evaluated by student examination
purposes."

There are other related questions of greater interest. As Ken states, there has not
been enough done in the cross-cultural areas.

In my view Russell does a disservice by drawing attention to the “no significant
difference” . Instead of such studies of differences between treatment groups,
researchers are likely to make more important discoveries if they concentrate on
identifying the variables that make a difference in performance among members within the groups.

More needs to be known about personality characteristics including learning style, and attitudes as predictors of achievement

A now-classic review of the literature pertaining to student variables is that of Cookson, (19.)
Biner( 1993) developed an instrument to measure learner attitudes.
Atman (19..) has undertaken pioneering research into student motivations while Gibson (1988) gives a good review of learning styles.

A subject touched upon by Bill Fraser who wrote that in deciding on what medium to use the institution should take into account: “the cognitive or thinking style preferences often exposed by students” he says he will tell us more about this during his presentation in the conference.

Researchers and reviewers have looked at the subject of learner attitudes from several perspectives. Some are concerned with merely assessing the level of learner satisfaction with particular courses; others attitude to technologies; some address attitude to teaching behaviors; a few discuss ways of changing attitudes.

More needs to be known about student attitudes, as well as their interaction with variables of age, gender and income level.

What about drop-out rates?

Earlier research has identified various variables that account for attrition. To what extent to they explain drop-out in programs using the new technology and the various teaching strategies and administrative structures employed today?

(e.g. Woodley and Parlett, (1983) was associated with gender, course workload, average number of students per tutor, course age and mathematical content. Chacon (1985 and 1989) showed the significant dependent variables to be: course age, number of students per tutor, course workload, average age of students, instructional quality of medium, variety of other media different to text, the time required to complete the course, the reactive behavior of the tutor, and the number of courses previously completed. Garcia-Llamas (1986) found the best predictors were positive self-evaluation of student, intensity of hours dedicated to study, and frequency of meetings with tutor. Bajtelsmith (1988) found the main determinants of persistence were the student's age, intention to obtain a degree, amount of courses completed in the institution, motivation to professional achievement, positive self-image about the program, intensity of study hours, and self-confidence in examinations. Kember (1989a, 1989b, and 1990), in claims that the decision to drop out is the product of a sequence of events occurring often in a linear form, and the events are related to antecedents, then orientation to study, the academic environment, social environment,
degree of academic integration and social integration, and an individual cost benefit analysis regarding the value of studying at a distance.

7. **Research will be in a context in which management issues must have more attention.**

Research issues regarding management include:

- How to increase the quality of program design and delivery.

Questions about designing distance learning materials include questions about how to organize and control the work of human resources.
Is the individual teacher of the dual mode system defensible in terms of quality or cost, compared with the team approach more often used in open universities?
Has the answer to this been affected by the new technology? …

How can teams be most effectively managed to ensure academic content is structured in a form most suitable for study? ...an old question .. but now ... using the new technology?

What techniques can help do a better job of allowing for the different pace at which students learn?

In the new learning environment, what is the nature of interpersonal interactions? How can the institution ensure there is appropriate social interchange, active individual learning, and small group collaborative learning? What is the nature and impact on learning of social presence at a distance?

Note: Dr. Margaret Taplin wrote about student participation, saying she had tried to stimulate group work activities online but while many students were enthusiastic others were reluctant to participate -- because it did not suit their preferred learning styles and even insisted on meeting face-to-face.

Administrative questions include those about how instructors can be adequately supported and the relative roles of administrators and teachers in planning and implementing courses.

8. **Research will be in a context in which the skills, attitudes and issues concerning faculty (teachers) will be important.**

Already there have been outbursts of objection to internet based distance education, though there is far wider acceptance of distance education by this technology than any previous form.
Support from the teaching profession (faculty) will be necessary for the continued development of the field.

What are the concerns of faculty?

How do institutions deal with faculty concerns such as Intellectual Property Rights, Faculty Workload?

Facilitating learning on-line is an art that is different from the classroom. The key is that the teacher actively USES the interactive nature of the media bringing learners into action by asking questions, encouraging student presentations, and in other ways involving them fully in the teaching-learning process.

Further research is needed concerning these techniques of facilitating interaction, especially with the new technology.

It becomes important to study the extent and quality of teacher preparation and in-service training in distance education, as well as the terms and conditions under which the teacher is expected to operate.

9. Research will be in the context of some new but also some very old areas of criticism, such as:

- What are the effects on the educational system of market-skimming by the private sector?

This will require macro-level analysis of the long term effects on the educational system of this phenomenon.

- Is on-line distance education really cost-effective?

Can the enormous potential for increasing quality while at the same time reducing costs actually be realized?

*Previous research has shown that distance education is highly cost effective when numbers are large and quality is high. This is especially so when opportunity costs are considered i.e. costs of maintaining training personnel and capital in the conventional training system as well as time and productivity lost when employees are engaged in conventional training.*

No good research has been done to show cost effectiveness under Internet based, extended teacher, conditions.

What does on-line education do to cultural diversity?

The problem is addressed from his own perspective by Terry Evans when he writes in his keynote:

… in the *developing* world … costs of new technology are often prohibitively high, and the level of knowledge of, and skills with, the new technologies are cripplingly low.
Local cultures and local languages usually do not relate to, or fit with, the new technologies; therefore, the introduction of new technologies is potentially damaging to local cultures and languages “

- **Is there a Gresham’s law of web-based learning – the bad drives out the good?**
  
  And what if the for-profit institutions truly follow Adam Smith’s injunctions to maximize profits by reducing costs to the utmost? Presumably we then experience “price wars”, with suppliers trying to undercut each other and increase demand by lowering costs even at the expense of the range and quality of services that can be delivered. We then suffer from Gresham’s law. Gresham, as you remember from Economics 101 – believed that consumers will often reject high quality goods if they have previously been exposed to similar products of lower-quality.

  Once suppliers of on-line courses market their services on the basis of low-cost, their cheaper but inferior programs may drive out confidence in better ones.

  Of course it can be argued that as in other markets, institutions to assess quality are likely to arise, -- though this has not happened so far -- and that there will always be buyers ready to pay more for a superior product. However the example of television, where there is an abundance of cheap and inferior programs and very few quality programs, is in my view, a sobering one. It suggests that while we should welcome the contributions of the for-profit sector, being sensitive to the problems as well as the opportunities that this growing involvement may pose will be in the best interest of private and public providers alike.

- **Problem of social isolation**
- **How can the development of content be globalized so that peoples of more developed countries learn more from the peoples of other countries and cultures?**
- **Quality control. As learning becomes more learner controlled, what structures may lead to effective quality certification?**

**How can this necessary research be implemented?**

In my on-line contribution I commented that a free-market approach may not be sufficient to have the questions we need to be addressed dealt with in a systematic way, if at all.

I would like to see a large scale, strategic approach funded by government, international agency, or possibly foundation.

The benefits of improved education brought about by appropriate use of technology seems to me to belong in the range of high priority social and economic objectives along with such global needs as the fight against AIDS or global warming --and in fact could contribute massively to the success of those and similar projects.
Other commentators on methodology include Dr. Wei-yuan Zhang who pointed out the need for more training of researchers in distance teaching organizations. He also raises the question of what methods researchers are trained in, believing that both Eastern as well as Western methods have their merits.

A great deal of interest was expressed in Dr. Cookson’s suggestion of forming an international working group. Dr. Caroline Sherritt felt Cookson’s suggestion for beginning a cyberspace dialogue is excellent and went so far as to suggest that perhaps research on open and distance education should ONLY be done through such collaborative methods.

Peter says he traces his personal interest in this area to at least four sources: but I would like to remind him of one other, namely the first Symposium on international dist.ed. research held in Venezuela in 1994, when we actually set up international cross cultural research teams ...but unfortunately we were in our concept ahead of the readiness of technology to support us ...The technology now is more ready ...I hope we are ... I am sure we will find out during this conference ... ...