

Abstracts ALM-6

Contents	Page
Plenary Talks	2
Poster presentations	4
Workshops	8
Research Reports	21
Topic Group Outlines	29



Opening Address

Mathematics in Use: Insights from a study of the workplace

Professor Celia Hoyles

Institute of Education, London

In this talk I will present some findings from a study of the mathematics used in three professions: investment banking, nursing and commercial flying. I will present examples of the routing practices used but also the surprises - where conflict among practitioners provoked more articulated discussion of the models in use.

I will use the research findings to make some suggestions for adults learning mathematics.



Plenary Address

"Fun with mathematics"

Frank Haacke

CINOP, Utrecht, Holland

A teacher nowadays is confronted with a lot more than transferring the knowledge of his subject to his students. In adult education this is known by teachers who worked according to Paulo Freire and realistic mathematics for years. Their way of working wasn't easily accepted in formal education.

At the moment the integration of learning skills - social skills with mathematical skills is a hot item in The Netherlands and other countries. Independent learning is the thing to do.

After my visit to the first congress ICME about Ethnomathematics in Granada last year it became clear that Ethnomathematics is the way of integrating all different nationalities with respect and enables us, the teachers, learn with the students how to work mathematically.

For our students it isn't enough to have knowledge. Society needs integrated men and women who can communicate and use their knowledge in an efficient and effective ways.

For practitioners in adult education independent learning means new ideas, but also a re-evaluation of the ideas one has been working with.

Choosing the right ideas and the correct path of implementation of a new educational system on all levels is a continuing process in which we all are participating. How we choose depends on the organisation we are working for, the amount of willingness to change, the means that we are given, the governmental support for this change, and ourselves.



These challenges are the topic of this lecture by a practitioner in Adults Learning Mathematics, whose conviction is that mathematics must be fun.

Poster presentations



Modelling Masks

Caz Randall

Lewisham College, London, UK

This poster and disc show an activity (developed with a student on a stagecraft course) worked out as a solution to a specific problem in stagecraft, but subsequently donated to the Maths department of the college for use in Application of Number for Art and Design courses.

The problem

To devise a quick, clean way of designing masks, based on a standard plain mask.

The proposed solution

To use the 3-D surface graph built into the EXCEL chart wizard to model a selection of masks, using the baseline measurements taken from one standard mask

The mathematics problems faced by a 'non-maths' student

- 1) How to measure curving surfaces (for x and y coordinates)
- 2) What datum to use for z coordinates
- 3) How to measure z distances accurately
- 4) How to decide which z coordinates to vary for each design.

The poster shows how each of these problems was approached, as well as the final set of materials to be used as part of the Art & Design course.



An Area Forum for Numeracy Tutors

Ruth Pocklinghorne

Meg North

Joy Joseph

West of England Numeracy Tutors' Forum

This presentation will illustrate and discuss the various experiences of setting up and running an area forum for numeracy tutors who work in a variety of settings in the West of England.



Mathematics/Socialism/History

David Kaye
Valerie Seabright

A poster presentation intended to link Marxist economic theory, South Yorkshire Labour history and municipal socialism highlighting links to real-life maths.

Sheffield was once the world capital for steel and was on the edge of the once huge Yorkshire mining industry. The presentation will reflect the rise and fall of the industries and the effect of international capitalism as it relates to Sheffield.

Sheffield was once the bastion for the development of municipal socialism attempting to provide an alternative approach to provision of services from cheap housing, a progressive education service and cheap and frequent local transport. It used to be known as the capital of the "Socialist Republic of South Yorkshire".

The rise and fall of the international free market has impacted on all aspects of life in Sheffield. The massive steel factories have been replaced by sports and entertainment stadia surrounded by a huge out of town retail complex. Local transport is now privatised, with costs rising and many people are now trapped on estates unable to gain access to the city centre and out of town facilities.

In the recent local elections, Labour lost control of Sheffield City which is now run by the Liberal Democrats, a situation which will have longstanding effects on the daily lives of Sheffield inhabitants whose services will be eroded even more.

The presentation will illustrate some aspects of the mathematics/numeracy which directly relate to these issues :

- Rise and fall of steel and coal
- Wage rates and trade union organisation history in Sheffield



- Cost and provision of municipal services
- Reference will be made to "Wage Labour and Capital" and "Value, Price and Profit".

Workshops



Adult Numeracy Tutor Training in England: past, present and future

Diana Coben

University of Nottingham, UK

This session will involve participants in exploring the past, present and future of adult numeracy tutor training in England in the light of changes in the organisation and accreditation of training of adult educators which are likely to have an impact on adult numeracy practitioners . We shall look at relevant research and examples of good practice in England and elsewhere and consider possibilities for future developments in the light of the incoming FENTO (Further Education National Training Organisation) Standards.

Numeracy tutor training has always been a "poor relation" - is a brighter future about to dawn ?



Adults as learners and teachers of Numeracy

Anne Kennelly
Goldsmiths College, London, UK

Adults Learning Mathematics - insights into the understandings, gained through an ongoing process of reflection on the taught sessions, of adults learning mathematics, and the application of these understandings, by the adults, to their observations, in their curriculum support role, of primary aged children learning mathematics in the numeracy class ie insights gained by being simultaneously in the role of learner in the taught course and 'teacher' in the support role in the primary classroom.

The group of adults on whom my study is based is one of classroom assistants who are currently attending a Specialist Teacher Assistant (STA) course. More recently there has been a change in the use of the classroom assistants' time from general duties to specific curriculum support in the classroom. Within the Mathematics focus of the STA course the classroom assistants study the teaching of mathematics in the context of the primary National Curriculum and of the National Numeracy Project. These two documents provide the focus of the mathematics' content for the course. The assistants therefore are in the role of 'learner' whilst attending the weekly session and in the role of 'teacher' whilst supporting primary aged children when working as classroom assistants in school. It is this dual role of learner and teacher of mathematics that is my focus for this study.



The ILSS Numeracy Framework

Mieke Van Groenestijn

Hogeschool van Utrecht, University of Professional Education,
Faculty of Education, Utrecht, NL

Mary Jane Schmitt

Harvard University Graduate School of Education, Cambridge,
MA, USA

An international survey of the numeracy abilities of adults is to be part of the International Life Skills Survey (ILSS), planned for the year 2001. The Numeracy Working Group, comprised of individuals from Australia, Canada, Holland, Israel, and the United States has been charged with the development of a theoretical framework and household survey.

In this session, two members of the Numeracy Working Group will take the opportunity to update and get feedback from ALM6 participants. Elements covered will be: the ILSS definition of numeracy; the facets of numerate behaviour; the complexity levels used to estimate task difficulty; and the co-variables of interest. Our goal for this session is to engage ALM membership in helping us think how this project can benefit numeracy programs and practice. We know it will serve as a vehicle for getting "numeracy" on the map along with "literacy" How can it serve as a vehicle for improving numeracy teaching practice?

Outline: 20 minutes update; 40 minutes small group discussion/commentary on the numeracy framework elements.



Modelling Workshop A : How should we plan 400m run lanes?

Juergen Maasz & Wolfgang Schloeglmann
University of Linz, Austria

An important step on the way to finding a solution to a real life problem is to find a model to describe it. If a course has the aim of showing the use of mathematics in solving real world problems it should train students in ways to find a good model.

Our workshop is in two parts.

In **Part A** we will work as a group of participants to find models for some different situations for planning 400 m running lanes.

In **Part B** we will discuss our experiences in this simulation of a course and the possibilities of transferring it into our practice as teachers.



Maths & Dyslexia

Pat Healey

London, UK

Why do some students have major problems learning mathematics ? Some may have had disjointed schooling or their schooling has created great anxieties around maths learning. Other students whose schooling has been good still seem to have difficulties with maths although they perform well in other areas. Why do some students still not improve with tuition ?

These questions led me to turn to language learning, dyslexia in particular and then to dyscalculia.

The session will consist of :

- Identifying some of the problems dyslexic students may have in learning maths
- Identifying different types of dyscalculia
- Case studies of students who have had some of these difficulties
- Investigating teaching/learning strategies which might help these students.



Work in Progress: National Council for Vocational Awards

John O'Donoghue
University of Limerick, Eire



Parents as Learners of Mathematics

Marta Civil & **Mary-Jane Schmitt**
University of Arizona, USA Harvard University, USA

In this session we will present two projects on parental involvement in mathematics. Both projects share a common goal of investigating ways to engage parents as learners of mathematics, in particular in ways similar to what their children may be experiencing in reform-based classrooms. In our work with parents we have found research on adult education, especially that grounded on critical pedagogy, particularly useful (Benn, 1997; Frankenstein, 1989; Frankenstein & Powell, 1994; Harris, 1991; Knijnik, 1996). One of the key premises in this research is to view parents as intellectual resources.

One project (MAPPS: Mathematics and Parent Partnerships in the Southwest) works primarily with Mexican American working class parents. The key premise behind this project is a rejection of a deficit model for the education of minority, working-class individuals. Instead, we seek to establish a two-way dialogue in which parents contribute their ideas about and uses of mathematics in their everyday life. One of our goals is to develop learning modules (Math for Parents) that combine reform-based mathematics with everyday mathematics. The project has three main components: 1) Leadership training for a core group of parents; 2) Parent workshops to reach out to more parents; 3) Math for parents courses to allow for an in-depth exploration of some topics in mathematics.

The other project, the Massachusetts Parent Involvement Project (MAPIP), is a five year initiative with the intent to involve 21,000 parents in the mathematics, science and technology education of their children. The project is particularly interested in three types of involvement: (1) parents doing (colearning) more math/science with their children, (2) parents advocating for quality math and science courses for their children, and parents leading others in (1) and (2). The project, now



in its third year, has developed several models for involving parents, mostly minorities, who are enrolled in adult basic education programs as well as family members who have in the past been reluctant to participate in school events.

In our presentation we will outline the two projects including a discussion of the theoretical framework that informs our work with parents. We will then engage the audience in a discussion on issues related to teaching mathematics to parents as adult learners. For example, for the first project, we are particularly interested in audience input on appropriate tasks for the Math for Parents modules. In the second project, we would like advice about some persistent barriers to parent participation.

References

- Benn, R. (1997). Adults Count Too: Mathematics for Empowerment. Leicester, England: NIACE
- Frankenstein, M. (1989). Relearning mathematics: A different third R - radical maths. London: Free Association Books.
- Frankenstein, M. & Powell, A. (1994). 'Toward liberatory mathematics: Paulo Freire's epistemology and ethnomathematics', in P. L McLaren & C. Lankshear (Eds.), Politics of liberation: Paths from Freire (pp. 74-99). New York: Routledge.
- Harris, M. (1991). Schools, Mathematics and Work, Falmer, New York.
- Knijnik, G. (1996). Exclusão e resistência: Educação matemática e legitimade cultural. Porto Alegre, Brasil: Artes Médicas.



Using ICT with Adults learning maths

Harry Sormani

Cinop, Holland

In this workshop we will explore some software for use with adults learning mathematics and numeracy and will consider the advantages of ICT over other mediums, and its disadvantages.



Competence and Paralysis: A case Study

Janet Duffin

University of Hull, UK

Building on earlier sessions I have done at ALM I want to devote myself this year to one student I have encountered during the year who compounds all the issues I have tried to tackle in earlier years. I will start with a brief outline of my contribution so far to the proceedings of ALM and will follow that with one or two examples of student comments received over the years. This will set the scene for the rest of the session in which I want to tell a story of a stark contradiction in a young person, abundantly endowed with personality traits which augur success, yet who exhibits, in connection with mathematics, a helplessness and panic that is not normally associated with the potentially successful.

I will paint a picture of this student from the beginning of her association with me and will hope, through the story of my experience with her, and through the comments of colleagues attending the session, to get a little nearer to understanding the reasons why so many intelligent members of the adult community persist in having negative attitudes towards mathematics.



Skills and math

Mrs Netty A.J.A. van Leek

Het Fort 7- 5581 AB WAALRE

Tel. 040-2216340

M.de.Laat@rec.roc-ehv.nl

Mrs Mieke M.C.I. de Laat

Moggendries 4- 5641 PN EINDHOVEN

Tel. 040-2908600

M.de.Laat@rec.roc-ehv.nl

Mrs Simone J. van Duin

W.v.Millenberchstraat 16- 5611 PS EINDHOVEN

Tel. 040-2121629

S.van.Duin@rec.roc-ehv.nl

In our workshop we would like to exchange experiences with other colleagues how to integrate societal (social and communicative and strategic and meta-cognitive) skills in every day math class, in order to make students able to use their knowledge in an efficient and effective way.



Strategies for Mental Mathematics

Sylvia Johnson

Sheffield Hallam University, UK

I work with adults who intend to teach mathematics. These adults are surprised to learn that within a single group of 20, not everyone computes mentally like they do, and that some people have no other mental images other than one of the written version of that calculation, no other strategies than to work a calculation out as if on paper, but in their heads.

In the UK, a new numeracy strategy is to be introduced in September into all (well almost all) primary schools. The emphasis in the early years is very much upon the development of mental strategies for 'numeracy'. The rationale for this draws upon research from other European and Pacific Rim countries and from the 3rd TIMMS study. There is also a political pressure borne out of beliefs such as 'people should know their tables', or 'you need to be able to basic arithmetic in your head before you use a calculator' etc. The strategy is very detailed and is hailed as a key mechanism in raising standards of numeracy in the UK.

The adults I work with have to learn how to teach strategies for mental numeracy. They are not automatically aware of the possible range available nor of language to describe/talk about particular strategies. In the past it is probably true to say that many schools have tested 'mental arithmetic' but have not necessarily explicitly taught pupils strategies for such aspects of numeracy, nor to discuss them.

In this workshop we will examine some of the strategies we ourselves use, we will examine some of the suggested learning objectives and teaching strategies posed in the numeracy strategy and will consider their value and application in working with adults on numeracy skills and knowledge (as opposed to young children). The political aims and dimensions and their likely success will also be discussed.



Research Reports



Improving Adults' Quantitative Problem Solving Skills :

A new approach

Noel Colleran

City of Limerick Vocational Education Committee, Ireland

John O'Donoghue

University of Limerick

Eamonn Murphy

National centre for Quality Management, University of Limerick, Ireland

Bernard Lonergan was a Canadian theologian and philosopher who died in 1984. In 1957 he published an important book entitled, *Insight: A study of human understanding*. In this work Lonergan discusses notions such as common sense knowing, scientific knowing, questioning, decision making and cognitional structure. He believed that an individual cannot come to know anything without engaging and proceeding through an invariant, dynamic cognitional structure. This is the focus of his work. The cognitional structure involves a cyclical process of experiencing, understanding, reflecting, judging and deciding. Lonergan warns that an appropriation of one's own cognitional structure is a life-long process.

This paper reports on the authors' attempt to adapt Lonergan's programme for educational purposes. A twelve-week educational programme for adults has been developed and is currently being tested with two groups of unemployed adults. Lonergan's work provides the theoretical framework for this programme but the work of other writers such as Piaget, Polya, Schoenfeld, Mason, Lave and Resnick have also influenced its development.

The purpose of this programme is not to develop self knowledge in the philosophical sense outlined by Lonergan, although this may be an outcome for a number of learners. It is to develop the quantitative problem-solving skills of adult learners by using Lonergan's philosophy. In particular this paper discusses efforts to adapt Lonergan's cognitional structure for educational purposes and gives details of the educational programme that was developed.



Reformation of a Bridging mathematics Course

Doreen Hartnall

University of Waikato, New Zealand

This is an interim report of an ongoing action research into a bridging Mathematics Course. The course was started in 1990 as a catch-up course mainly aimed at mature students entering University with a lack of basic mathematical skills and wishing to enrol in courses which have a mathematical or statistical requirement. As a result of concerns about the low pass rate and high drop out rate in the course, research was undertaken into ways to improve the course. After consultation with all concerned in the course, including especially those schools of study from which the course participants predominantly came, it became clear that the course was failing to supply what many students needed and even for those who succeeded in passing the course, there were doubts as to the long-term value they gained from the course. Some changes were made for 1998 involving, among other changes, teaching of problem solving strategies by talking through the process while questioning and probing, and changes in assessments to put emphasis on mathematical processes. The results of the changes were positive in all aspects.

- Better retention rate
Fewer dropped out of the course (25% compared to 44%-59% in the previous years)
- Higher success rate
65% passed compared to 25% - 40% in previous years)
- Positive feedback especially from those re-doing the course
- Increased confidence
- More positive feelings about mathematics
- Improved understanding
- Most were happy with assistance available



Affects and Mathematics learning - some remarks

Wolfgang Schloeglmann

University of Linz, Austria

Many research papers on learning mathematics by adults report different types of emotions (anxiety, blocks....) in courses of further education in mathematics.

These affects often hinder successful learning. If we had more knowledge about these affects and their origin we would be able to develop didactical strategies to handle this problem. Analysing the different emotional reactions we can distinguish two types of affects:

- 1) Affects originating from the individual learning history of a person
- 2) Affects which are a reaction to a person's personal life just now.

In this report, I will try to give some hints about the origin of these two types of affects.



Considering different kinds of knowledge in the solution of problems in everyday life

Dhamma Colwell

King's College London

Adults are conscious of some of the knowledge that they use in their everyday activities and unconscious of other knowledge. Also, some knowledge is of how to do things and other knowledge is about things. Tomlinson has put these two dichotomies together into a matrix to give four categories of knowledge: deliberate action capacity, intuitive action capacity, recallable explicit awareness and usable implicit awareness. I have observed gardeners and upholsterers at work and talked with them about their work. I have also organised a group of women to discuss how they use solve problems in their everyday lives. In this paper I am considering whether Tomlinson's matrix gives useful insights into data I have collected.



Who teaches Maths in Higher Education ?

Pat Drake

University of Sussex, UK

Much currently is made of mathematics being a 'core skill' in Higher Education. What has not been established systematically is what this means in terms of (a) in which undergraduate programmes are mathematical skills specifically taught; and (b) who are the teachers.

This report will outline an attempt to find out the extent of mathematics teaching and learning across the undergraduate curriculum in one University. This was far from a straightforward exercise, requiring the analysis of the prospectus and interviews with course leaders to identify 'good' teachers of mathematics or statistics, data handling or numeracy.

As suspected, much of the mathematics teaching is undertaken by individuals who would not describe themselves as mathematics specialists. Indeed, many learned their mathematics independently in order to address specific problems, eg. related to research, or in order to teach.

This raises questions about the nature of mathematical knowledge, which far from being coherent and unified, may effectively also be fragmented and context specific as well as covert within the curriculum. Nevertheless this does not necessarily imply that it is not taught and learned effectively.

Parallels may be drawn with other work which locates mathematics in specific situations. In Bernstein's terms, this is not 'folk' mathematics, for there is a mathematical purpose and focus.



Becoming Critical of Adult Numeracy in a Freirean Literacy program

Ana Lucia Braz Dias

Universidade Catolica de Brasilia

This study investigated mathematics teaching in a non-formal adult literacy program that proposes to use Paulo Friere's 'liberation' pedagogy. Using the methodology of critical action research, the study practitioners in the literacy program in self-reflection about their practice in mathematics education and about how Friere's pedagogy can be applied to the teaching of mathematics. Using cyclic alternations of reflection and action as a strategy for the improvement of both practice and theoretical understanding, participants in the study negotiated and implemented alternative practices for the program's teacher preparation course. This was done both as a tentative contribution to the improvement of the course and as an opportunity for further reflection on the mathematics education practice. Data collection was done both through 'monological' methods (application of a questionnaire and collection of documents) and through 'dialogical' methods (one to one and group discussions). The study employed critical reconstructive analysis, which uses hermeneutical processes to reconstruct meanings in communicative acts. The major theme I identified as characterising mathematics practice in the course was the interdependence between technical competence of teachers and their political commitment. The study identified norms existing in the context in which the program takes place, that should be challenged for a liberatory pedagogy:

- (a) illegitimisation of non-standard practices in mathematics
- (b) beliefs in a necessary hierarchy in the learning of mathematics
- (c) acceptance of the 'basic skills' mathematics curriculum
- (d) compartmentalisation of curriculum into disciplines
- (e) emphasis on the decontextualisation of mathematics



Humanising mathematics through its historical roots

Sue Elliott & Hilary Povey
Sheffield Hallam University, UK



Topic Groups



Topic Group A

Developing a Theoretical Framework for Adult Mathematics Learning and Teaching

Co-ordinators:

Professor Kathy Safford, St. Peter's College USA

Roseanne Benn, University of Exeter, UK

Juergen Maasz, University of Linz, Austria

In Utrecht we discussed whether our community of practice and research in ALM is situated within the didactics of mathematics (meaning the scientific discipline related to research and development work in mathematics education) or not. In Sheffield, we will continue this discussion. It will be an interesting task to find a way to do research on adults learning mathematics, to communicate about different research results and background theories and to use this to improve our practice of teaching.

The disciplines of adult education and mathematics education could be represented using a Venn diagram where each discipline is a clearly defined set yet each shares a substantial subset of theory with the other. In order to develop a theoretical framework for adult mathematics education it is necessary to examine the prevalent theories influencing the distinct disciplines as as to identify tenets supported by each as well as those which are at variance with the other.

Contributions to this Topic group are welcomed in the form of short paper presentations. Please bring with you, copies of your contribution which should be approx 1000 words.



Topic Group B

The role of Technology in supporting Adult Mathematics Learning

Co-ordinator:

Harry Sormani

CINOP, Holland

Contributions to this Topic group are welcomed in the form of short paper presentations. Please bring with you, copies of your contribution which should be approx 1000 words.

Copies of software which are PC Windows compatible can also be presented as part of this topic group.



Topic Group C

Socio-cultural perspectives on adult mathematics learning

Co-ordinator:

Dhamma Colwell, King's College, London, UK

Socio-cultural perspectives on learning and using mathematics inside and outside educational institutions

Dhamma Colwell, King's College London

Rather than understanding knowledge as something individuals possess, Lave suggests that

... a more appropriate unit of analysis is the whole person in action, acting with the settings of that activity. This shifts the boundaries of activity well outside the skull and beyond the hypothetical economic actor, to persons engaged with the world for a variety of "reasons" ... (1988:17-18.)

So her focus is on people interacting with each other in 'communities of practice' and with the environment in which they are situated.

Students' and teachers' activities in the communities of practice of educational provision can be seen as being made up of the same 'activity structures', 'prior understanding', 'tools and conventions', and 'social relationships' identified by Saxe in his study of children selling candy in the street in Brazil (1991). I have identified a fifth element, 'affectivity' in the data I have collected, which I contend is also an element in all educational activities (1998). Affectivity appears both in the decisions people make about which problems to solve and in their choice of strategies to solve them.

Traditionally, the abstract and procedural mathematics taught in educational institutions, labelled 'school mathematics' by Nunes et al (1993), has been seen as applicable to any situation. This myth has enabled the academy to maintain control over what constitutes mathematics. Adults need and want access to school mathematics, because it is used as a gatekeeper by employers and providers of education and training, and



because there is a high status attached to its achievement. But society's expectation is that only a proportion of students will succeed in learning the prescribed curriculum. The construction of mathematics as a particularly difficult subject that few people can comprehend justifies the failure of a proportion of students. It is therefore a legitimate role in society (McDermott, 1993) to fail mathematics tests and examinations.

The International Adult Literacy Survey (IALS) (OECD, 1997) seems to have set out to prove that large proportions of the adult population are unable to solve various tasks, which look like simple everyday literacy and numeracy activities, but are more like examples of school test items. Once a real life text such as a bus timetable is wrenched out of its real life context it ceases to be a timetable and it becomes a test item. ... these test items have a remote and indeterminate relationship with the original literacy and numeracy practices from which the texts were taken (Hamilton and Barton, 1999:10).

There is an underlying assumption in this survey, and many others of adults' mathematical abilities, that the authors know what mathematics people use in their everyday lives and how they use it. But this has only recently emerged as a valid area of academic enquiry. The mathematics used by people with a low status in society, like manual workers and women, has been considered as an inferior form of practical or functional knowledge (Harris, 1997), not really mathematics at all, because the practitioners are seen as only having concrete, non-transferable skills, rather than a knowledge of the underlying abstract concepts.

People use methods of solving problems appropriate to the situation they are in and probably learnt in that situation (Lave, 1988, Nunes et al, 1993). Moreover, when they are outside educational institutions, they are dealing with a far greater range of variables, than in the problems used in school mathematics. But people often reject the ways they solve problems in their everyday lives as 'mathematics' and view them as 'common sense' (Coben and Thumpston, 1995). In my study I have had to persuade the participants that there was something worthwhile to be found in their everyday and work activities, like managing their time and money, finding their way around, and estimating and calculating quantities of materials or sizes of objects or spaces (1998).

I would contend that we still know little about this mathematics. The IALS survey certainly fails to produce a picture of adults' literacy and numeracy abilities as used in their everyday lives. But this is probably not its purpose. Hamilton and Barton describe the survey as 'enactive research, meaning that it is designed to rationalise and support policy decisions that have already been made outside the research arena'



(1999:14). If it is designed to support the development of educational opportunities for adults, it is to be welcomed.

However, in recent reforms in education in England and Wales, policy-makers and their advisers are wresting control over what constitutes mathematics and how it should be taught away from the academy, at least up to GCSE level (the examination taken at age 16 in schools). If the IALS survey is being used to support the reconstruction of school mathematics as functional and procedural, then it is to be deplored.

Bibliography

- Coben, D. and Thumpston, G. (1995) Researching mathematics life histories: a case study, in *Maths with a human face*, Proceedings of ALM-2, Second International Conference of Adults Learning Maths - a Research Forum. London: Goldsmiths College, University of London, in association with ALM.
- Colwell, D., (1998) The roles of feelings and logic and their interaction in the solution of everyday problems, in *ALM-5, Proceedings of the Fifth International Conference of Adults Learning Maths, a Research Forum*, pp 103-114. London, Goldsmiths College, University of London, in conjunction with ALM.
- Hamilton, M. and Barton, D. (1999) *The International Adult Literacy Survey: what does it measure?*, (draft) Literacy Research Group, Lancaster University. To be published in *International Review of Education*.
- Harris, M. (1997) [2] *Common threads, women, mathematics and work*. Stoke on Trent: Trentham Books.
- Lave, J. (1988) *Cognition in practice: mind, mathematics and culture in everyday life*. UK: Cambridge University Press.
- McDermott, R.P. (1993) 'The acquisition of a child by a learning disability' in S. Chaiklin and J. Lave, Eds., *Understanding practice perspectives on activity and context*. UK, Cambridge University Press.
- Nunes, T., Schliemann, A. D, Carraher, D. W. (1993) *Street mathematics and school mathematics*. UK, Cambridge University Press.
- OECD (1997) *Literacy Skills for the Knowledge Society*. Paris: OECD
- Saxe, G. B, (1991), *Culture and cognitive development - studies in mathematical understanding*, Lawrence Erlbaum Associates, Hillsdale, New Jersey, Hove, and London.

Contributions to this Topic group are welcomed in the form of short paper presentations. Please bring with you, copies of your contribution which should be approx 1000 words.



Topic Group D

Affective Factors in Adult Mathematics Learning

Co-ordinator:

Alison Tomlin, London, UK



Revised Abstract

Considering different kinds of knowledge in the solution of problems in everyday life

Dhamma Colwell
King's College London

People use their prior understandings to solve the problems they encounter in their everyday activities. Some of this knowledge is conscious and some unconscious; some knowledge is of how to do things and other knowledge is about things and situations. Tomlinson has put these two dichotomies together into a matrix to give four categories of knowledge. In this paper I am considering whether Tomlinson's matrix gives useful insights into data I have collected by observing gardeners and upholsterers at work and having conversations with them and in discussing with a group of women about how they solve problems in their everyday lives. Affectivity, which features strongly in the data, can be accommodated by extending the matrix.



New Abstract Saturday

'A fresh start?: a critique of the 1999 British Basic Skills Report.

Roseanne Benn
University of Exeter, UK

This workshop will look at the the 1999 Moser Report on Basic Skills 'A Fresh Start'. Copies of the summary will be provided. The group will discuss how the contents reflect government thinking particularly the emphasis on a better trained workforce rather than active citizenship. We will explore where Moser sees the root of numeracy problems and see if this accords with our own experience and where he sees the solutions and if we agree with this.

Although this is a British Report, I would very much welcome contributions from overseas colleagues as to how this relates to their own national thinking and situation.