



Evaluation in E-learning: the European Academic Software Award

Rachel Panckhurst, Sophie David, Lisa Whistlecroft

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Evaluation in e-learning: the European Academic Software Award

edited by
Rachel Panckhurst
Sophie David
Lisa Whistlecroft

This book discusses the whole issue of evaluation in the general area of e-learning, and specifically looks at the processes used within the European Academic Software Award (EASA). This competition was created over a decade ago in order to evaluate academic software, developed mainly by teachers, students, researchers and engineers, and is organised by the European Knowledge Media Association (EKMA). The aim of this book is not only to summarise the competition itself but also to reflect upon future directions for evaluation in e-learning for the next decade.

Rachel Panckhurst is a senior lecturer in Computational Linguistics at the Université Montpellier 3. She is a member of the CNRS FRE 2425, Praxiling research group; her current research interests include computer-mediated communication, online learning and software evaluation.

Sophie David is a senior researcher in Linguistics and Computational Linguistics at the CNRS. She is a member of the CNRS UMR 7114, MoDyCo; her current research interests include morphology, lexical semantics and software evaluation.

Lisa Whistlecroft is an Associate Director of PALATINE, the UK Higher Education Academy subject centre for the performing arts, based at Lancaster University.

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· 2004 ·
Université Paul-Valéry, Montpellier 3

THE editors would like to thank the current members of the EKMA Board for their support and encouragement in the creation of this book. They would also like to thank past and present members of EKMA, and all the participants in EASA competitions, for making EASA something worth writing a book about.

This book was published with sponsorship from the European Knowledge Media Association (EKMA), the Université Paul-Valéry Montpellier 3 (METICE — MédiaTic) and the National French Research Organisation (CNRS FRE 2425 Praxiling).

Gilles Pérez-Lambert deserves our special thanks for suggesting we do the desktop publishing of this book in $\text{T}_{\text{E}}\text{X}/\text{L}_{\text{A}}\text{T}_{\text{E}}\text{X}$. Gilles spent a lot of out-of-office hours answering Rachel's nagging questions, debugging technical problems, and designing the stylesheet for this edition. We also wish to thank Maya Little for her design of the book cover.

The editing of this book would have been more complicated without the office space, Internet and printer access, provided by Professor Shirley Alexander and the staff at the Institute of Interactive Media and Learning (IML) at the University of Technology, Sydney. Rachel appreciated IML as a stimulating place to work on the book during her sabbatical leave in 2004.

As editors, we communicated and exchanged many versions of the book between the United Kingdom, France, Australia and New Zealand. We would like to thank each other for a very cooperative effort.

Rachel Panckhurst
Sophie David
Lisa Whistlecroft

*For our parents, who saw the birth of the computer,
and for the children of the e-world.*

Welcoming address

Maruja Gutierrez-Diaz

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It is with great pleasure that I accept the invitation to write a welcoming address for this book. In the short but intense life of the *eLearning initiative*, since its inception in 2000¹ as one of the first EU answers to the ambitious objectives of the Lisbon Council², we have seen a fast and deep evolution.

Technological aspects, be they as important as robust software or broadband capacity, have a decreasing relevance as they are often taken for granted. In many professional sectors, Information and communication technologies (ICT) have become more a commodity than an innovation. The same is happening with e-learning. From a worrying debate about how and when could schools possibly be connected to the Internet, we are now proposing a European-wide project of schools-twinning via the Internet. From an endless discussion about quantity we are now totally focussed on quality. The technology is there, it is now a matter of how to use it well.

This is why we welcome with gratitude and respect the experience of people who have been there since the beginning. Ten years in this field is a long time. Establishing quality criteria ten years ago was probably not an easy task. Keeping them in tune with the extremely fast pace of technological progress and evolution is a remarkable achievement. It is stimulating to read that, as the quality has improved, so the definition of quality has followed it.

1. *e-Learning — Designing tomorrow's education*. Commission of the European Communities, Brussels, 2000. Available online at : <http://europa.eu.int/comm/education/programmes/elearning/comen.pdf>

2. The Lisbon Strategy is available online at: http://europa.eu.int/comm/lisbon_strategy/intro_en.html

And that the expectations for quality are now much higher is a most encouraging conclusion.

This is now one of the most challenging needs for Europe: to build a strong demand for e-learning quality in the education and training environment. We know now that e-learning is not a fad, nor something reserved for the more technologically minded. It is, in its own right, an important education vector, to be used both in distance learning and in presential learning contexts. A quality-driven development of e-learning is essential for the high quality education and training systems that European citizens need. Quality-driven development of e-learning is a key contribution for placing European education institutions in the place they deserve in the global arena.

The pathways for future development of EKMA and EASA explored in this book are promising. It is not easy to explain, guarantee and disseminate a quality credo. Transfer of experience is also a difficult and demanding task. But EKMA is well placed to face it, as the excellent track record that this book shows. As you rightly observe, the means for communication and dissemination are improving, and so also is the interest and the receptiveness of education stakeholders. The time is right, and the venture is important.

I think the interest and generosity with which EKMA wishes to share its experience, and the enthusiasm with which it faces the next ten years, deserves our applause and gratitude, and I wish EKMA and EASA a fruitful and successful development in the years to come.

Preface

Jonathan Darby

UK EASA/EKMA Representative 1993 to 1998, EKMA Board Chair 1998 to 2002

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WHEN Professor Adolf Schreiner of the University of Karlsruhe first put to me the idea of a European Academic Software Award (EASA) I was intrigued. The year was 1991 and, as the UK Association for Learning Technology (ALT) was no more than a faint idea in the back of a few people's minds, I regretfully declined his initiation to join. However when ALT was launched two years later, one of the first actions I took as President of the new association was to get in touch with Professor Schreiner to enquire if the offer to join EASA still stood. It did and so began a 10 year personal association for me with EASA and its parent body the European Knowledge Media Association (EKMA).

A striking feature of EASA/EKMA has been the way the member organisations representing each European country have come together entirely of their own accord and have each found the resources to enable EASA to happen. No external agency was required to create EASA and the six EASA competitions have only been possible through a very substantial amount of voluntary effort.

The reasons each country has for participating in EASA vary considerably. For one it is motivated by a desire to promote a particular segment of the software industry and combat domination by the USA; for another it is to promote student-centred learning; for a third it is to afford recognition to academic staff who devote time to educational software development and so help redress the bias toward rewarding research at the expense of teaching. Despite the varied reasons for participating in EASA there is complete agreement among all the partners in the value of the biennial event, and so it has continued for more than a decade despite the many setbacks that have been encountered and overcome.

Above all being involved in EKMA and EASA has been fun. This has been true for committee members, organisers, discipline coordinators, jurors and even competitors. The shared interest in e-learning and support for students has resulted in a real buzz at EASA finals, new insights for participants and lasting friendships. This book is a tribute to all those who have committed their time and energy so unstintingly to EASA/EKMA over the years and a mark of confidence that it will continue for many years to come.

Contents

<i>Welcoming address</i>	
Maruja GUTIERREZ-DIAZ	v
<i>Preface</i>	
Jonathan DARBY	vii
<i>Overview</i>	
The Editors	xi
<i>Sommaire</i>	
Les éditeurs	xv
<i>Zusammenfassung</i>	
Die HERAUSGEBER	xix
1 <i>The making of EASA/EKMA</i>	
Wim B. G. LIEBRAND	1
2 <i>EKMA: statutes and financial resources</i>	
Randoald CORFU, Martin LEHMANN	7
3 <i>A review of the 1998 European Academic Software Award Competition</i>	
J. Michael SPECTOR, Ling SHI, Vaidotas SRUOGIS, You JIONG	11
4 <i>A review of the European Academic Software Award: year 2000</i>	
Rachel PANCKHURST, Bas CORDEWENER	23
5 <i>Experiences from the European Academic Software Award: year 2002</i>	
Göran PETERSSON	43
6 <i>Evaluating academic software: can comparing chalk and cheese be valid, reliable or accountable?</i>	
Nick HAMMOND	61

7	<i>Finding finalists: from individual evaluations to collective decisions</i> Lisa WHISTLECROFT	75
8	<i>Questionnaire results: from the competitors' point of view</i> Sophie DAVID, Rachel PANCKHURST	83
9	<i>From the first to the second decade of EKMA: reflections and recommendations</i> Göran PETERSSON, Bas CORDEWENER, Lisa WHISTLECROFT	89
10	<i>The future of evaluation in e-learning</i> Shirley ALEXANDER, Debra MARSH, J. Michael SPECTOR	97
	Appendices	105
A	<i>EKMA Statutes</i> European Knowledge Media Association	107
B	<i>Statuts EKMA</i> European Knowledge Media Association	117
C	Members of the EKMA board	127
D	Authors	131

Overview

The Editors

THIS book discusses the whole issue of evaluation in the general area of e-learning, and specifically looks at the processes used within a European competition which was created over a decade ago, the *European Academic Software Award* (EASA). This competition was created in order to evaluate academic software, emanating therefore from Universities, Higher Education Institutes, Research organisations, etc. and developed by teachers, students, researchers, engineers, etc. with or without collaboration from commercial enterprises. The EASA competition is organised by an association, called the *European Knowledge Media Association* (EKMA).

All of the people involved in the EASA/EKMA process over the past years, whether they were organisers or jurors, felt they had gained important insight into the general area of software evaluation and were keen for this knowledge and experience to be shared with others.

The aim of this book is not only to summarise the competition itself but also to reflect upon future directions for software evaluation in e-learning for the next decade. A number of issues are addressed, including: portability within Europe, language issues, a publishing house, a gold standard quality mark, a register of accredited reviewers, and guidelines and protocols for developing and applying evaluation criteria.

The approach is more practical than theoretical; we thought it especially important to convey the experience of the past decade and to reflect upon the ways in which we could modify this approach in years to come.

Several academics give their 'visions' of how evaluation and e-learning may evolve in future years. We decided to include remarks from those working within a European perspective but also from other parts of the world (Australia, the USA), in the last chapter.

Chapter 1: ‘The making of EASA/EKMA’

Wim B. G. Liebrand (Director of SURF Foundation, the Netherlands) was chair of EKMA from 1993 to 1998 and vice-chair from 1999 to 2001. His chapter reflects upon the general history and evolution of EASA and EKMA during the past decade.

Chapter 2: ‘EKMA: statutes and financial resources’

It was important to gain inside knowledge regarding the financial and legal matters of the EKMA process. This chapter was written by one of the founding fathers, Martin Lehmann (BiP info SA, Switzerland), in collaboration with Randoald Corfu (University of Neuchâtel, Switzerland), one of the Swiss organisers for EASA 2004. The official statutes are included in the appendices in both English and French.

The next three chapters describe three EASA competitions: 1998 in Oxford, 2000 in Rotterdam and 2002 in Ronneby.

Chapter 3: ‘A review of the 1998 European Academic Software Award Competition’

J. Michael Spector (Florida State University, USA) and Ling Shi, Vaidotas Sruogis, You Jiong (University of Bergen, Norway), initiated the process by publishing an article describing the 1998 EASA competition in *Research Dialogue in Learning and Instruction*. We have republished (by agreement with the editors) a shortened version of this article.

Chapter 4: ‘A review of the European Academic Software Award: year 2000’

Rachel Panckhurst (Université Montpellier 3 & CNRS, France) and Bas Cordewener (SURF Foundation, the Netherlands) describe the EASA 2000 process, from stage 1 to stage 3 and discuss the evaluation at the finals. They also briefly interviewed those attending the finals and have included their remarks.

Chapter 5: 'Experiences from the European Academic Software Award: year 2002'

Göran Petersson, (Council for the Renewal of Higher Education, Sweden Net University and EKMA chair since 2002) not only describes the EASA 2002 competition, but also makes recommendations for the future. These include reusing the database structure and documents therein, involving more countries, improving marketing and combining the event with an international conference.

Chapter 6: 'Evaluating academic software: can comparing chalk and cheese be valid, reliable or accountable?'

Nick Hammond (University of York, United Kingdom) gives a thorough analysis of the evaluation process used during the initial rounds and at the EASA finals, including discussion on accountability, reliability and validity in relation to results from the past three EASA competitions.

Chapter 7: 'Finding finalists: from individual evaluations to collective decisions'

Lisa Whittlecroft (Lancaster University, United Kingdom) gives valuable insight into the role of 'discipline coordinators' during the EASA process. This involves: finding and selecting jurors, providing jurors with appropriate guidelines in order to carry out the tasks at hand, making sure the submissions are correctly allocated to jurors having the corresponding expertise, collating evaluations and recommendations and finally deciding about the quota of recommended finalists and giving feedback to those competitors who do not succeed in reaching the final stage.

Chapter 8: 'Questionnaire results: from the competitors' point of view'

Sophie David (CNRS & Université Paris 10, France) and Rachel Panckhurst (Université Montpellier 3 & CNRS, France) analyse the results of a questionnaire which was issued during stage 2 of the EASA 2002 competition. The authors focus on: language, advertising, communication, disciplines, reasons to compete, and the European nature of the competition.

Chapter 9: 'From the first to the second decade of EKMA: reflections and recommendations'

Göran Petersson (Council for the Renewal of Higher Education, Sweden Net University and EKMA chair since 2002), Bas Cordewener (SURF Foundation, the Netherlands), and Lisa Whistlecroft (Lancaster University, United Kingdom), draw together the knowledge gained in the ten years of EKMA's experience of organising the EASA competition, and propose various European-wide developments of EKMA that might be considered for the decade to come.

Chapter 10: 'The future of evaluation in e-learning'

Shirley Alexander (Director, Institute for Interactive Media and Learning, University of Technology, Sydney, Australia), Debra Marsh (e-learning consultant, Montpellier, France), J. Michael Spector (Associate Director, Learning Systems Institute, Florida State University, USA) share their views on the way evaluation within the e-learning sector is evolving.

Appendices

It may be useful for other interest groups who wish to set up similar structures to be aware of the legal implications in creating an association. The statutes of the EKMA organisation have been included here in both English and French.

A full list of EKMA board members and a list of authors are also provided here.

Sommaire

Les éditeurs

Ce livre aborde la question de l'évaluation dans le domaine de la formation ouverte et à distance (FOAD) et plus spécifiquement celle des problématiques et des méthodologies mises en place dans le cadre d'un concours européen, créé il y a plus de 10 ans, le concours *European Academic Software Award* (EASA). Cette compétition s'est donné comme objectif d'évaluer des logiciels développés et mis au point, dans des établissements d'enseignement supérieur et de recherche, par des enseignants, des chercheurs, des ingénieurs, des étudiants, etc., et ce, avec ou sans la collaboration d'entreprises privées. Le concours EASA est organisé par l'association *European Knowledge Media Association* (EKMA).

Différentes personnes, organisateurs ou jurés, impliquées ces dernières années dans le concours EASA ou dans l'association EKMA, ont voulu faire partager leurs savoirs et leurs expériences dans ce domaine.

Le but de ce livre est non seulement de donner un aperçu des différentes compétitions passées, mais aussi d'approfondir la réflexion sur différentes questions qui importeront dans les années qui viennent, notamment : la portabilité européenne, la diversité des langues européennes, la création d'une maison d'édition, l'établissement de standards, la réalisation d'un répertoire d'experts évaluateurs, l'établissement de protocoles et de directives pour développer et appliquer les critères d'évaluation.

La démarche suivie est plus pratique que théorique ; nous avons pensé qu'il importait d'abord de transmettre l'expérience des années passées et de réfléchir sur les moyens à mettre en place pour améliorer dans les années qui viennent l'approche mise en œuvre.

Plusieurs chercheurs (européens, australiens et américains) nous ont fait part de leurs réflexions prospectives à propos de l'évaluation et de la formation ouverte et à distance. Nous avons décidé d'en rendre compte dans le dernier chapitre.

Chapitre 1 : *The making of EASA/EKMA*

Wim B. G. Liebrand (Directeur de la SURF Foundation, Pays-Bas) a été président de l'EKMA de 1993 à 1998, et vice-président de 1999 à 2001. Son chapitre retrace l'histoire et l'évolution du concours et de l'association durant ces dix dernières années.

Chapitre 2 : *EKMA : statutes and financial resources*

Il nous a paru important de préciser les aspects juridiques et financiers liés à l'EKMA. Ce chapitre a été écrit par Martin Lehmann (BiP info SA, Suisse), l'un des fondateurs du concours, et Randoald Corfu (Université de Neuchâtel, Suisse), l'un des organisateurs de la compétition 2004. Les statuts officiels de l'EKMA sont disponibles en annexe, en anglais et en français.

Les trois chapitres suivants relatent les compétitions qui se sont tenues à Oxford (en 1998), à Rotterdam (en 2000) et à Ronneby (en 2002).

Chapitre 3 : *A review of the 1998 European Academic Software Award Competition*

Michael Spector (Université de Floride, États-Unis) et Ling Shi, Vaidotas Sruogis, You Jiong (Université de Bergen, Norvège) avaient écrit un article décrivant la compétition de 1998, paru dans *Research Dialogue in Learning and Instruction*. En accord avec l'éditeur de la revue, nous le republions ici dans une version raccourcie.

Chapitre 4 : *A review of the European Academic Software Award : year 2000*

Rachel Panckhurst (Université de Montpellier 3 & CNRS, France) et Bas Cordewener (SURF Foundation, Pays-Bas) décrivent la compétition 2000, de l'étape 1 à l'étape 3, en détaillant l'évaluation menée lors de la finale. Ils terminent leur chapitre par un certain nombre de remarques de jurés et de participants qu'ils avaient interviewés lors de la finale.

Chapitre 5 : *Experiences from the European Academic Software Award : year 2002*

Göran Petersson (Council for the Renewal of Higher Education, Université Net Suède et président de l'EKMA depuis 2002) décrit la compétition 2002

et fait un certain nombre de recommandations, qui portent sur la réutilisabilité de la base de données et des documents qu'elle comporte, l'élargissement de la compétition à d'autres pays, les aspects financiers, le lien entre le concours et une conférence internationale.

Chapitre 6 : *Evaluating academic software : can comparing chalk and cheese be valid, reliable or accountable ?*

Nick Hammond (Université de York, Grande-Bretagne) analyse de manière précise et détaillée le processus d'évaluation mis en place à chaque étape mais aussi lors de la finale. Il discute notamment des questions de fiabilité, de validité et d'explicitabilité, en s'appuyant sur les compétitions 1998, 2000 et 2002.

Chapitre 7 : *Finding finalists : from individual evaluations to collective decisions*

Lisa Whistlecroft (Université de Lancaster, Grande-Bretagne) s'attache au rôle de « coordinateur de discipline » et à ses différentes tâches : trouver et sélectionner des jurés, fournir aux jurés les informations sur le protocole, distribuer les logiciels en fonction de l'expertise des jurés, rassembler les évaluations, choisir les finalistes, restituer les éléments essentiels pour les participants non finalistes.

Chapter 8 : *Questionnaire results : from the competitors' point of view*

Sophie David (CNRS & Université Paris 10, France) et Rachel Panckhurst (Université Montpellier 3 & CNRS, France) analysent les résultats d'un questionnaire adressé lors de l'étape 2 aux différents participants de la compétition 2002. Les auteurs s'attachent à l'analyse des points suivants : la langue, la publicité, la communication, les disciplines, les raisons de participer et le caractère européen de la compétition.

Chapitre 9 : *From the first to the second decade of EKMA : reflections and recommendations*

Göran Petersson (Council for the Renewal of Higher Education, Université Sweden Net et président de l'EKMA depuis 2002), Bas Cordewener

(SURF Foundation, Pays-Bas), and Lisa Whistlecroft (Université de Lancaster, Grande-Bretagne) font la synthèse de l'ensemble des expériences acquises par l'association EKMA concernant l'organisation des concours EASA depuis une décennie. Les auteurs proposent ensuite différentes missions de dimension européenne auxquelles l'EKMA pourrait s'attacher.

Chapitre 10 : *The future of evaluation in e-learning*

Shirley Alexander (Directrice, Institute for Interactive Media and Learning, University of Technology, Sydney, Australie), Debra Marsh (consultante en formation ouverte et à distance, Montpellier, France), J. Michael Spector (Directeur associé, Learning Systems Institute, Florida State University, États-Unis) réfléchissent sur l'évolution de l'évaluation dans le domaine de la formation ouverte et à distance.

Annexes

Il nous a paru utile de fournir à d'autres personnes désirant travailler sur ces domaines des informations précises concernant les enjeux légaux d'un fonctionnement associatif. Les statuts de l'EKMA ont donc été inclus à la fin du livre, en anglais et en français.

La liste complète des membres de l'EKMA, ainsi que la liste des auteurs, sont également fournies en annexe.

Zusammenfassung

Die Herausgeber

übersetzt aus dem Englischen von Irene Hyna^a und Rhonda Riachi^b

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Dieses Buch behandelt die Frage der Evaluation von e-learning Systemen im Allgemeinen und geht dann auf das Evaluationsverfahren im Rahmen des *European Academic Software Award* (EASA) ein, einem europäischen Wettbewerb, der vor mehr als 10 Jahren ins Leben gerufen wurde. Dieser Wettbewerb wurde geschaffen, um die Entwicklung und den Einsatz von Software aus dem Universitäts- und Wissenschaftsbereich zu fördern, die von Lehrenden, Studenten oder Forschern, in oder auch ohne Zusammenarbeit mit kommerziellen Unternehmen, entwickelt wird. Der Wettbewerb EASA wird von der Vereinigung *European Knowledge Media Association* (EKMA) ausgerichtet.

Alle, die in den vergangenen Jahren in EASA oder EKMA Aktivitäten eingebunden waren, — sei es als Organisatoren oder Juroren — haben einen wertvollen Einblick in den Themenkreis Software-Evaluation gewinnen können und möchten diese Erfahrung gerne an andere weitergeben.

Ziel dieses Buches ist nicht nur, einen Überblick über den Wettbewerb zu geben, sondern es möchte auch die Diskussion über Themen anregen, die in den kommenden Jahren (bei Evaluation von e-learning Systemen) eine Rolle spielen werden: Berücksichtigung der europäischen Sprachenvielfalt, Einführung eines Qualitätssiegels und einer Präsentationsplattform, Erstellung eines Verzeichnisses mit anerkannten Fachexperten, Richtlinien und Anleitungen für Evaluationskriterien.

Der Ansatz in diesem Buch ist mehr pragmatisch als theoretisch. Wir halten es für besonders wichtig, die Erfahrungen der letzten 10 Jahre zu vermitteln und Wege aufzuzeigen, wie Software Evaluation in den kommenden Jah-

ren modifiziert werden könnte.

Verschiedene Wissenschaftler (aus Europa, Australien und den Vereinigten Staaten) teilen uns ihre Vorstellungen mit, wie sich Evaluation und e-learning in den nächsten Jahren weiterentwickeln könnten. Sie kommen im letzten Kapitel zu Wort.

Kapitel 1: *The making of EASA/EKMA*

Wim B. G. Liebrand (Direktor der SURF Foundation, Niederlande) war von 1993 bis 1998 EKMA-Vorsitzender und stellvertretender Vorsitzender von 1999 bis 2001. Sein Kapitel beschreibt die Entstehungsgeschichte von EASA und EKMA während des letzten Jahrzehnts.

Kapitel 2: *EKMA: Statutes and Financial Resources*

Während des Entstehungsprozesses von EKMA konnten wichtige Erfahrungen über finanzielle und rechtliche Belange gewonnen werden. Darüber schreibt in diesem Kapitel Martin Lehmann (BiP info SA, Schweiz), ein EKMA-Gründungsmitglied, zusammen mit Randoald Corfu (Neuchâtel University, Schweiz), einem der Schweizer Organisatoren von EASA 2004. Die offiziellen Statuten sind im Anhang zu finden (in Englisch und Französisch).

Die nächsten drei Kapitel beschreiben drei Wettbewerbe: 1998 in Oxford, Großbritannien, 2000 in Rotterdam, Niederlande und 2002 in Ronneby, Schweden.

Kapitel 3: *A review of the 1998 European Academic Software Award Competition*

J. Michael Spector, Ling Shi, Vaidotas Sruogis, You Jiong (Florida State University, Vereinigte Staaten und University of Bergen, Norwegen) begannen damit, einen Artikel mit der Beschreibung des EASA 1998 zu verfassen, der in der Zeitschrift *Research Dialogue in Learning and Instruction* veröffentlicht wurde. Dieser Artikel ist hier in einer mit den Herausgebern abgestimmten gekürzten Fassung abgedruckt.

Kapitel 4: *A review of the European Academic Software Award: year 2000*

Rachel Panckhurst (Université Montpellier 3 und CNRS, Frankreich) und Bas Cordewener (SURF Foundation, Niederlande) beschreiben den Ablauf des

Wettbewerbs EASA 2000 von Phase 1 bis Phase 3 und gehen auf die Evaluation während der Endausscheidung ein. Sie schließen ihr Kapitel mit einigen Antworten und Bemerkungen von Juroren und Teilnehmern, die sie während der Endausscheidung befragten.

Kapitel 5: Experiences from the European Academic Software Award: year 2002

Göran Petersson, (Council for the Renewal of Higher Education, Sweden Net University; EKMA-Vorsitzender seit 2002) beschreibt nicht nur den EASA 2002 Wettbewerb, sondern äußert auch Ideen für die weitere Vorgangsweise. Er empfiehlt unter anderem die Weiterverwendung der im Rahmen von EASA 2002 entstandenen Datenbank und der bisher verwendeten Dokumente, die Einbindung von weiteren Ländern, die Verbesserung des Marketing, sowie das Kombinieren des Wettbewerbes mit einer internationalen Konferenz.

Kapitel 6: Evaluating academic software: can comparing chalk and cheese be valid, reliable or accountable?

Nick Hammond (University of York, Großbritannien) analysiert detailliert den Evaluationsprozess in allen Phasen, besonders aber während der Endausscheidung. Dabei untersucht er die Ergebnisse der vergangenen drei Wettbewerbe auf Transparenz, Gültigkeit und Zuverlässigkeit.

Kapitel 7: Finding finalists: from individual evaluations to collective decisions

Lisa Whistlecroft (Lancaster University, Großbritannien) gibt wertvolle Einblicke in die Rolle einer Fachbereichs-Koordinatorin während des Bewertungsprozesses: Auswahl von Gutachtern, Richtlinien für die Gutachter, korrekte Verteilung der Einreichungen an die Gutachter entsprechend deren Expertise, das Sammeln der Evaluationsergebnisse und der Empfehlungen der Gutachter und schließlich die Entscheidung über Anzahl der Finalisten und die Rückmeldungen an diejenigen Teilnehmer, die die Endrunde nicht erreicht haben.

Kapitel 8: *Questionnaire results: from the competitors' point of view*

Sophie David (CNRS & Université Paris 10, Frankreich) und Rachel Panckhurst (Université Montpellier 3 & CNRS, Frankreich) analysierten die Ergebnisse einer Befragung der Teilnehmer am EASA 2002 nach der zweiten Einreichungsrunde. Die Autorinnen legen ihr Augenmerk auf: die folgenden Aspekte: Sprache des Einreichungsmaterials, Publizität, Kommunikation, Fachbereiche, Gründe für die Teilnahme an dem Wettbewerb und den europäischen Aspekt des Wettbewerbes.

Kapitel 9: *Conclusion and recommendations for the future*

Göran Petersson (Council for the Renewal of Higher Education, Sweden Net University; EKMA-Vorsitzender seit 2002), Bas Cordewener (SURF Foundation, Niederlande), und Lisa Whistlecroft (Lancaster University, Großbritannien) fassen die Erfahrungen zusammen, die durch die Organisation von EASA Wettbewerben über 10 Jahre hinweg gesammelt werden konnten und schlagen für die kommenden Jahre eine Ausdehnung von EKMA auf weitere europäische Länder vor.

Kapitel 10: *The future of evaluation in e-learning*

Shirley Alexander (Direktorin am Institute for Interactive Media and Learning [IML], University of Technology of Sydney, Australia), Debra Marsh (Konsulentin für e-learning, Montpellier, Frankreich), und J. Michael Spector (Vizedirektor, Learning Systems Institute, Florida State University, Vereinigte Staaten) teilen ihre Ansichten über die Weiterentwicklung von Evaluation im Bereich von e-learning mit.

Anhänge

Da die gesetzlichen Rahmenbedingungen für die Gründung von Vereinigungen mit ähnlichen Strukturen können nützlich sein können, sind im Anhang die offiziellen Statuten (in englischer und französischer Sprache) enthalten.

Weiters wird auch eine vollständige Liste aller bisherigen Mitglieder des EKMA-Vorstandes und ein Autorenverzeichnis zur Verfügung gestellt.

The making of EASA/EKMA

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THE European Academic Software Initiative started at a time when we realised that information and communication technologies were about to dramatically transform many aspects of our life. Policy makers in Europe recognised that a rapid and efficient integration of the European role in the global information society constituted a vital prerequisite for a strong Europe. More specifically, the White Paper on Growth, Competitiveness and Employment¹ designated the domain of education and training as a critical factor in realising those European ambitions. At the same time we also were aware of the fact that, especially in the domain of Higher Education (HE), there existed hardly any ICT that were developed within Europe, let alone from a European perspective.

On the other side of the Atlantic the innovative provision of educational services had been very effectively stimulated for many years, especially by the so-called EDUCOM/NCRIPTAL awards. 'EDUCOM '94 featured a new vision: it highlighted virtual campuses transcending geographical boundaries through the marvels of distance education . . . helping American academe collectively articulate a vision of digital libraries and networked learning environments.'²

Germany and Austria were the first to follow the EDUCOM/NCRIPTAL approach by instigating the *Deutsch-Österreichischen Hochschul-Software-Preis*, back in 1990. It soon became clear that the idea of using a competition to stimulate innovative software applications for HE also worked in Europe. Given the fact that Europe recognised education and training as a critical

1. *White Paper on growth, competitiveness, and employment: The challenges and ways forward into the 21st century*. The European Commission. 1993. Available online at: <http://europa.eu.int/en/record/white/c93700/contents.html>

2. Nigel Gardner, 'EDUCOM '94: transforming education', in: *Active Learning*, 1, p. 59, CTISS Publications, 1994.

domain to improve its position in the global information society, one would expect that the broadening of the German/Austrian initiative to a truly European initiative would have been an easy thing to accomplish. In the event it took more than two years and several discussions before the initiative could be extended to six countries. The cultural diversity in Europe is eminent, it is a jewel to cherish, but it does considerably slow down common initiatives, even when there is no disagreement on the mission to accomplish.

Between 1990 and 1993, a small group of representatives of national associations for HE prepared the road for the European Academic Software Award initiative (EASA). Of course the founding fathers of the *Deutsch-Österreichischen Hochschul-Software-Preis*, Adolf Schreiner [Germany] and Hans-Peter Axmann [Austria] were involved. Martin Lehman [Switzerland] and Wim Liebrand [Netherlands] joined in early. Then Jonathan Darby [UK] and Hans Jalling [Sweden] completed the core group of countries that actually founded EASA in 1993.

At that time our goal was to promote and recognise the development of outstanding academic software in Europe. And in operationalising this broadly defined mission the cultural differences appeared. What exactly is outstanding? Should it be innovative software? Is it possible to define and measure that criterion independent of discipline or country? What is academic software? Can a student or a software company produce academic software? What exactly does it mean that the software should have been developed in Europe? Is it not more important that the software can be used across Europe? Does the dominant use of the English language in the EASA competition mask or fade out the cultural differences that EASA wants to honour and promote? Who qualifies as a judge of the software that is submitted?

Looking back at the many attempts to provide answers to these fundamental questions, I am very proud that gradually more and more of a consensus was reached between the countries now participating in the EASA competition. That is not to say that these discussions were easy. The issues mentioned above immediately touch the backbone of the educational systems and cultures in these countries. Cultural differences are much bigger than one would expect, given the physical distance between these neighbouring countries. The differences in the position and role of full professors, teachers and students are fundamentally different in the participating countries. Organising a European competition that is designed to award outstanding applications in different educational systems is only feasible if all parties accept that an approximation of their ideal model is the best they can get, and that is what we have realised. The EASA competition has increased

the awareness of the significance of academic software development for the European information society.

The set-up of the first EASA competition, organised in Heidelberg in 1994, was more or less a copy of the *Deutsch-Österreichischen Hochschul-Software-Preis*. The huge differences, of course, were that the competition language was officially English and that all countries in Europe could participate. The very solid, extensive and thoroughly designed model for evaluating and selecting the final award winners was, however, used in that and all subsequent EASA competitions. The archetypal competition goes as follows.

The competition is conducted in three stages. The first stage consists of a broad call for submissions, encouraging as much participation as possible by inviting entries from all over Europe. At the end of the first stage, only those entries that do not meet the minimal requirements are eliminated, usually about 5%. Normally an EASA competition receives an average of 200 stage 1 entries distributed over 15 disciplines.

In the second stage, entries are categorised by discipline and sent to discipline coordinators who recruit qualified jurors in the relevant discipline. Jurors are teachers, students and practitioners in the various disciplines, and they evaluate entries on both academic and technical content. Each submission is reviewed by three jurors of different background and different countries. At the end of this stage, the best 30 submissions, distributed over disciplines, are selected for the final stage.

During the finals, usually organised back-to-back with an existing educational conference, the finalists present their application to the audience and to a team of 4 or 5 jurors who evaluate and score the submission on the same criteria as used in the second stage:

- Innovation
- Design and ease of use
- European portability
- Educational materials and approach
- Evaluation of use

A sophisticated algorithm is used to provide a first ranking of the 30 submissions. An extensive discussion between all the finals jurors (usually about 20) finally yields the best 10 submissions, which receive the prestigious EASA award.

The 1994 EASA competition was organised by ASK/University of Karlsruhe in Heidelberg, Germany. With over 200 participants from 21 European countries and 70 European jurors, the 1994 award program constituted a remark-

ably successful start. In the award ceremony itself 35 candidates from Germany, the UK, France, Russia, Sweden, Norway, Switzerland, Austria, the Netherlands and Turkey presented their programs to an international and interdisciplinary jury of experts. The 1994 awards were handed out by Vincent Parajon-Collada, the EU Deputy Director General of DG XIII. He stated that:

the target of the European Academic Software Award is of particular relevance to the objectives of the Commission, and even more so to my specific responsibilities in the areas of information marketing research, in the areas of information and language engineering, including libraries and, in addition, the dissemination and exploitation of the results of Community sponsored research.

It is sad to observe that the perfect match between EASA's mission and the ambitions of the European Commission have led to nothing more than verbal support for the EASA competition from the Commission. As was stated earlier, the solid and extensive set-up of the EASA competition has several advantages in terms of the quality of the selection process, the feedback given to the authors and the recognition they gain from it. The big disadvantage is that it is also an expensive way to organise a competition; the more because, back at that time, several copies of all submissions had to be distributed on paper, tapes and floppy discs by traditional mail!

The second competition was organised in Austria by ASI/University of Klagenfurt. This time the whole competition, quite revolutionary back in 1995 and 1996, was organised by using the Internet. Electronic transfer of files, documents and software programs was not easy because of the heterogeneity in communication protocols and platforms. Despite this the server statistics showed an average number of 7,000 to 8,000 requests per month! Besides the electronic transformation of the competition, during the EASA 1996 competition we developed a sophisticated evaluation procedure. This 'Qualitative Weight and Sum Procedure' was developed to avoid the crude outcomes of the usual numerical weight and summing approach. This algorithm has been further refined and is still used in the EASA competition.

Meanwhile, the initial group of six participating countries had been extended to eight. Both France, represented by Rachel Panckhurst, and Norway, represented by J. Michael Spector, then joined the EASA initiative. Given the broadening of the initiative, the never-ceasing need for improving the quality of the teaching and learning process with the help of ICT, and the continuing lack of financial support from the European Community, we decided to found EKMA. EKMA is the European Knowledge Media Association, a pan-European membership organisation dedicated to stimulating

and disseminating the understanding, development, and use of knowledge media within higher education. (Higher education is taken to include all aspects of post-compulsory education and training undertaken within a formal educational context. Thus, further and vocational education is explicitly included). To achieve this aim, EKMA organises activities, events and publications, including a major biennial event dedicated to the judging of academic software (EASA). EKMA is legally incorporated in Cortaillod, Switzerland, and its trademarks have been registered within the European Community and in Switzerland (see Chapter 2). The current board (2003–4) of EKMA consists of: Göran Petersson, (Sweden, chair), Irene Hyna (Austria), Rachel Panckhurst (France), Bernard Süselbeck, (Germany), Bas Cordewener (the Netherlands), Martin Lehmann (Switzerland) and Rhonda Riachi (UK). The set-up of the EASA competition has stabilised now. This volume describes that stabilisation process in more detail. In order to give a complete list of the EASA competitions I will briefly mention those since 1996. The third competition was organised in Oxford, UK, in 1998 by ALT, NCET and BECTa [see Michael Spector's contribution in Chapter 3].

In 2000 the competition was organised in Rotterdam, the Netherlands, by the SURF Foundation, [see the contribution by Rachel Panckhurst and Bas Cordewener in Chapter 4].

The Swedish Council for Undergraduate Education organised EASA 2002 in Ronneby, Sweden [see Chapter 5].

And finally the upcoming 2004 competition will be organised in Switzerland by one of the original founding fathers, Martin Lehmann.

Conclusion

The EASA initiative was born at a time when we acknowledged that stimulating the development and use of outstanding academic software would both improve the quality of education and training, and allow Europe to achieve a stronger and more independent position in the global information society. The participating countries have invested a lot of energy and expertise to design and implement a mechanism that improves the quality and portability of effective ICT applications in higher education and research in Europe. The EASA initiative has been successful in its mission because many of the finalists of earlier EASA competitions have found commercial partners for the distribution and upgrading of their software. The criteria EASA uses for evaluating academic software give a good indication of the long-term usability of the software. One of the strongest achievements of this initiative has not yet been mentioned at all. Thus far we have focused on the realisation of the ambitions of national and European policy makers and managers in HE.

The EASA competition has, however, had an outstanding impact on those who develop these jewels of innovation. For the academics and students who have developed the applications, EASA is about Fun, Feedback, Recognition and Honour!

- Fun** It really is rewarding to enter a competition, to run the risk, to receive an award!
- Feedback** Typically, each submission has been evaluated by students, technicians and pedagogical experts. The result is communicated to the developers and this feedback is obviously highly important in shaping the next version of the application.
- Recognition** Career-wise it still is more rewarding to invest time in research and its subsequent publications than in teaching, or in the development of innovative educational materials. EASA gives long-overdue recognition to innovation in teaching.
- Honour** Being selected as one of the top 30 of several hundreds of submissions is an honour in itself.

These provide motivation to the people who will help to realise the ambitions we formulated more than a decade ago.

EKMA: statutes and financial resources

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Origin

EKMA originated as a result of a prize won by a Swiss team (Martin Lehmann, BiP info SA and Anne-Nelly Perret-Clermont, University of Neuchâtel) in a German software contest (*Deutsch-Oesterreichischen Hochschul-Software-Preis*) held in Berlin in October 1992. The award is signed by Rainer Ortleb, German Federal Minister of Education and Science (Bundesminister für Bildung und Wissenschaft) and by Adolf Schreiner, Chair, Academic Software Corporation (Vorsitzender des Akademische Software Korporation).

This German-Austrian prize was created by Adolf Schreiner and Hans-Peter Axmann, the latter from the Austrian Federal Ministry for Education, Science and Culture (BMBWK). Its aim was to demonstrate academic products to the industrial sector and to stimulate their dissemination through commercial marketing.

The victory of a Swiss team in a German-Austrian competition underlined the need for opening up the event to a wider audience. Martin Lehmann suggested extending the next competition to all European countries. Thus the finals for the 1994 contest, sponsored by Springer Verlag, were held in Heidelberg and brought together competitors from Germany, the United Kingdom, France, Russia, Sweden, Norway, Switzerland, Austria, the Netherlands and Turkey; the European Academic Software Award (EASA) was born.

This success demonstrated that it had been the right time to have organised the competition at a European level. A 'think tank' composed of Martin Lehmann, Adolf Schreiner, Hans-Peter Axmann, Hans Jalling (Sweden),

Jonathan Darby (the United Kingdom), Michael Spector (Norway) and Wim Liebrand (the Netherlands) became the foundation for organisation on a European scale.

Until that time, the organisation of the competition had relied on national structures: the Akademische Software Korporation for Germany, and the Federal Ministry for Education, Science and Culture (BMBWK) for Austria. In order for the competition to become autonomous and to be extended to the whole of Europe, it was necessary to create an association with its own legal statutes and financial basis.

In 1995, thanks to the initiative of Anne-Nelly Perret-Clermont (University of Neuchâtel), Martin Lehmann (BiP info SA), Samuel Jaccard (Engineering School, canton of Neuchâtel) and Jacques Méry (Federal Office of Statistics), a committee was created in Switzerland to evaluate both the feasibility of a European association, and the opportunity of active participation in relation to the new structure. Over and above the support from the institutions represented by the participants of the committee, it obtained support from the Federal Office of Education and Science (OFES, Switzerland).

Statutes

Discussions between the European partners continued during the second EASA, which was held in Klagenfurt in 1996. At that time, the competition was still supported by the Austrian Federal Ministry for Education, Science and Culture (BMBWK), belonging to one of the countries forming the voluntary framework of the future EKMA. It was unanimously decided that the movement should be consolidated and European statutes created (see Appendices). Martin Lehmann and his Swiss team were elected to complete this task.

The group very quickly became aware of the difficulty of the project. It was a matter of writing statutes that would be both compatible with European-wide jurisdiction and yet as flexible as possible. A specialist in international law was required in order to meet these aims; the task was entrusted to the University of Neuchâtel and the drafting was undertaken by Nathalie Tissot.

One of the first problems raised was that of finding a name for the association. EASA could not be used, because it had already been registered; the European Knowledge Media Association (EKMA) was chosen instead. The name was lodged with the Office for Harmonisation in the Internal Market (trade marks and designs) in Alicante (Spain), on 29 October 1997. Nevertheless, the original choice (EASA) was maintained for the contest, in order to preserve the quality mark which it represents.

Finally, on 10 July 1998, the constitutive general assembly adopted the statutes, which were lodged with the trade register of Neuchâtel. This date marks the official birth of EKMA. The official report is signed by Wim Liebrand, president, Adolf Schreiner, vice-president, and Martin Lehmann, treasurer.

The members constituting the association at the time of its foundation were:

- Austria (BMBWK — The Federal Ministry of Education, Science and Culture)
- Germany (ASK — Akademische Software Korporation)
- the United Kingdom (ALT — Association for Learning Technology and NCET — National Council for Educational Technology)
- Sweden (National Agency for Higher Education/Högskoleverket, Stockholm)

EASA finally belonged to a statutory organisation called the European Knowledge Media Association (EKMA), which guaranteed both a legal basis and the possibility of extending to other countries. France joined the association at this stage.

EKMA is a private law association, which means that only the members of the committee are responsible. The original statutes appear in the Appendices (in English and French).

Resources

Financial arrangements, which are inseparable from the nature of any association, were widely discussed. After several proposals, it was decided that the resources would be provided by the members of the association. This provision makes the association rather fragile. Indeed, there is no legal bond between the members of the committee and the organisations with which they are associated. A more durable permanence would be guaranteed if EKMA, as a European association, could benefit from funding from the European Union.

At the start, the annual contribution to the committee, per country represented, was CHF 8,000, i.e. around €5,500. Almost all of the resources are invested in the organisation of the European Academic Software Award. The operating expenses of the association are covered on a voluntary basis by the members of the committee, and the administrative expenses are covered by the organisations with which the members are associated.

Financial arrangements of the competition

The first two competitions (Heidelberg, 1994 and Klagenfurt, 1996), were entirely financed by the organisers, because the association did not then exist. From 1998 on, EKMA has financed the competition, without being the official organiser. The 1998 EASA was organised in Oxford, by a group of members of the association who were brought together for the event. EKMA, for its part, underwrote the financial arrangements.

Even though the majority of those working on EASA contribute voluntarily, the cost has risen substantially (currently around €90,000 to €100,000). The funds given by the EKMA Board to the local organising committee do not cover all the costs. The local organising committee needs additional funding to cover the costs involved in running the finals. These expenses are mainly: room hire, which can be very high if private buildings (conference centres etc.) are used; technical equipment necessary for the presentation of the software; food for all of the participants, and hotel and travel expenses for jurors. Hotel and transport costs for competitors are covered by their home countries.

Cost trends

As for most events, the organisation costs of the finals increase over time. The first solution was to increase the annual contribution of the members and today the contribution is €7,500 per annum per country.

In order to limit a continual rise in fees, but nevertheless to continue to give the EASA competition its polish and sense of occasion, it is very important to recruit new members. Such growth would make it possible to ensure the future of the European Knowledge Media Association.

A review of the 1998 European Academic Software Award Competition

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The judging process at the Finals

EASA 1998 was held from 18–20 September. Nineteen jurors, including eleven academic jurors and eight student jurors were invited from all over Europe. Jurors were divided into six teams, with 3 or 4 jurors on each team.

There were both academic and student jurors in every team. 35 entries were in the final competition, and every entry in the finals was judged by 2 teams. Each team judged 14 or 15 entries.

The entries covered 13 different discipline areas and represented 9 different countries. Software was installed on computers in an exhibition room. Each team of jurors worked together to evaluate the entries there. Jurors were allocated 30 minutes for each entry. Authors were asked to prepare a short demonstration and to answer jurors' questions. At that time, each juror made his/her own evaluation on an evaluation sheet, which included the following 5 criteria:

1. The editors have suppressed the introduction, as the other more recent chapters of this book explain the EASA/EKMA process at length. Homepage URLs have also been updated where necessary and outdated links have been removed. Descriptions of software may still be accessed through the 1998 EASA archive: <http://ltsnpsy.york.ac.uk/ltsnpsych/easa>

Table 1: Summary of stage 1 entries

Discipline	Eliminated	Incomplete	Complete	Total
Arts/humanities	1	8	11	20
Biology	0	3	15	18
Chemistry	3	1	6	10
Computer science	1	5	17	23
Economics	0	5	10	15
Education	2	1	7	10
Engineering	1	4	16	21
Generic Support	1	4	17	22
Languages	0	5	9	14
Mathematics	2	2	13	17
Medicine	3	3	40	46
Physics	1	3	12	16
Social science	1	4	11	16
Support disabled	0	0	1	1
Grand total	16	48	185	249

1. Innovation: Is the project novel in terms of the activities it supports?
2. Design and ease of use: Is the product or approach well-designed and easy to use or apply?
3. European portability: Can the software or approach be used (or adapted for use) across Europe?
4. Educational materials and approach: Are the materials and the approach educationally sound?
5. Evaluation of use: Has the software or approach been evaluated, and how good is the evaluation?

The ratings for each criterion ranged from 1–4 (1 as lowest and 4 as best). After the demonstration in the exhibition room, the team discussed each entry and agreed on an overall rating. These forms were submitted to the organisers, who summarised all the ratings for a plenary session with all the jurors present. In addition, each juror completed a ‘criteria weighting form’ in which the juror specified how important he/she considered each criteria to be, with the highest score being 4 and the lowest score being 1.

The day after the team evaluations, all the jurors met together to decide the award categories and the award winners. First the summary of jurors’ ‘criteria weighting forms’ was shown. The EKMA committee had decided

on these 5 criteria before the finals, but a great deal of autonomy and flexibility were provided to the panel of jurors. The mean values for the jurors' weighting of the criteria were as follows: Innovation = 3.4, Design = 3.7, Portability = 2.2, Education = 3.8, and Evaluation = 2.8. This indicates that the panel of jurors regarded European portability as the least important criterion. Because scores in each area were weighted according to the jurors' rankings of the criteria, scores on European portability had no effect on the outcome. EKMA believes this category is significant and would like to see it emphasised more in future competitions. They conveyed this message by providing a statement of special recognition for the award winner which had scored the highest on European portability (EuroMET).

At the final plenary meeting of the jury panel, each entry received an adjusted score based on the team ratings and on the weights for the categories. The jurors then discussed these rankings. Entries whose ratings were very different between two teams were discussed in detail and in some cases clarifications were made and scores adjusted accordingly. New trends in computer technologies and especially in Web-based learning were considered and discussed at length. The jurors had little interest in electronic books and did not place high value on commercial purpose. Educational significance, design quality, and innovation were most highly valued. In the end, the jurors selected the 10 winners with the highest overall scores. Since one of the 10 award winners was a student submission, the group also awarded a student prize, with the cash prize sponsored by BECTa.

Table 2: Stage 2 entries by country

Austria	8
France	3
Germany	103
Ireland	1
Spain	1
Sweden	10
Switzerland	14
Netherlands	5
UK	88
Total	233

This year's 10 award winners are shown in Table 3 and the other finalists are listed in Table 4. Several times during the juror sessions there were com-

ments about the quality of all of the submissions and the difficulty in selecting only the 10 best.

Table 3: 1998 EASA Award winners (alphabetical order)

ChemVISU Marco Ziegler (student prize) University of Fribourg Switzerland Chemistry
CUT! Kjell Jerselius Department of Theatre and Cinema Studies, Stockholm University Art 7film & video AB Sweden Arts & Humanities
Dysphonia Leif Akerlund Lund University Sweden Medicine
ELM-ART Gerhard Weber Paedagogische Hochschule Freiburg Germany Computer Science http://www.psychologie.uni-trier.de:8000/projects/ELM/elmart.html
EuroMET Daniel Gondouin Météo France France Physics http://euromet.meteo.fr
Glacial Analysis: an interactive introduction Jane K. Hart University of Southampton United Kingdom Social science

Table 3: 1998 EASA Award winners (alphabetical order) (*cont.*)

Merlin Debra Marsh The University of Hull United Kingdom Generic Support http://www.hull.ac.uk/elearning/merlin
Neurology Interactive Christof Daetwyler, MD University of Berne, Inst. For Medical Education, Dept. for Education Media Switzerland Medical http://www.aum.iawf.unibe.ch/prod/cd/Neuro_Projekt.HTM
The Trunk Peter Twining The Open University United Kingdom Education
Virtual Dentist Margareta Molin Umea University, Faculty of Odontology, Department of Prosthetic Dentistry Sweden Medical

Table 4: Other finalists of EASA 1998 (alphabetical order)

ACCS Alison Hudson Sheffield Hallam University United Kingdom Engineering
Bihari Farmer John Stainfield University of Plymouth United Kingdom Social science
CALFEM Karl-Gunnar Olsson Div. of Structural Mechanics, Lund University Sweden Engineering http://www.byggmek.lth.se/Calfem

Table 4: Other finalists of EASA 1998 (alphabetical order) (*cont.*)

CALRAD Jennifer M. Wilson University of Dundee United Kingdom Medicine
CASTLE Helen Pownall University of Leicester United Kingdom Generic Support http://www.le.ac.uk/castle
CATTSY Lothar Schmiedel Leipzig University Germany Languages or linguistics
CC2 Douglas Quinney Keele University United Kingdom Mathematics
Cinderella's Café Ulrich Kortenkamp ETH Zürich Switzerland Mathematics http://www.cinderella.de
CoMentor Catherine Skinner Huddersfield University United Kingdom Generic Support
DSPNexpress Christoph Lindemann GMD Research Institute FIRST Germany Computer Science http://www.dspnexpress.de

Table 4: Other finalists of EASA 1998 (alphabetical order) (*cont.*)

HADES — the Hamburg Design System
Norman Hendrich
Universitaet Hamburg, FB Informatik
Germany
Computer Science
HomeBeats
Arun Kundnani
Institute of Race Relations
United Kingdom
Arts & Humanities
http://www.irr.org.uk/publication/cdrom
HRAM — Health Resources Allocation Model
Lucas Godelmann
Institut fuer Informatik der Universitaet Basel
Switzerland
Medicine or medical
Interactive Rheumatology Tutor
Ray Armstrong FRCP
Southampton University Hospitals NHS Trust
United Kingdom
Medicine or medical
http://ourworld.compuserve.com/homepages/ray_armstrong
LabAssistant
Richard Parsons
University of Dundee
United Kingdom
Biological or life science
MOGA
Martin Josef Geiger
University of Hohenheim
Germany
Economics, management or business
Quantum Mechanics
Kristel Michielsen
Institute for Theoretical Physics, Univ. of Groningen
The Netherlands
Physics
http://rugth30.phys.rug.nl/compphys

Table 4: Other finalists of EASA 1998 (alphabetical order) (*cont.*)

SALMON Paul Kenyon University of Plymouth United Kingdom Biological or life science http://salmon.psy.plym.ac.uk/year1/bbb.htm
SPEECHLAB Ingolf Franke Media Enterprise-Ingolf Franke Germany Languages or linguistics http://www.mpi.nl/world/tg/speechlab/speechlab.html
The Human Brain Marion Hall Open University United Kingdom Biological or life science
The Marketing CD ROMs Paul R. Smith The Multimedia Marketing Org. United Kingdom Economics, management or business
The X-Ray Files J. J. Stephenson The Dental School, University of Newcastle upon Tyne United Kingdom Medicine http://www.radiology.co.uk/srs-x
Transmath V2.1 J. W. Pitchford University of Leeds United Kingdom Mathematics
VRML 2.0 Robot Martin Rohrmeier German Aerospace Center-DLR Germany Engineering
VYPER Gunther Lehmann Institute for Info. Processing Tech. Germany Engineering

Special recognition for European portability

As indicated earlier, one of the ten award winners, EuroMET, was given special recognition for European portability, although this was not a heavily weighted evaluation criterion. EuroMET is a successful European project for sharing online meteorological educational resources. EuroMET is the first European, interactive, distance training in meteorology.

The EuroMET project arose from the conjunction of two factors:

- the emerging interest within the meteorological community for computer aided learning (CAL) demonstrated by 'spontaneous' developments in some institutions in the early '90s; and,
- the political decision at the European Union level to foster telematics applications within the 4th framework programme for research and development.

22 meteorological institutions within 15 European countries decided to merge their efforts into the production of CAL products, and to make them available online using the Web and related tools. EuroMET is a good example of using internet technology to facilitate distance learning and to address problems of keen interest to education in Europe (e.g. multiplicity of cultures and languages, heterogeneity of meteorological institutions and training strategies, and disparity in resources production, etc.).

EuroMET fosters unified European meteorological education and training. The approach is to do the following: to support a variety of training needs; to be available on the most common computer platforms; to provide information and interfaces in different languages; to allow easy access to up-to-date resources; to unify user interfaces; to allow different cultural approaches; to train in multimedia techniques; and to enlarge the community of users. EuroMET achieves these goals with a cross platform solution providing easy access to a variety of resources which are maintained by the most appropriate authority. EuroMET conducted extensive user analysis and this resulted in a modular environment suitable for many teaching and learning functions. There are four languages supported in the demonstration project, and the possibility for easy translation into other languages.

EuroMET also attempts to support multi-cultural approaches, and integrates shared development and evaluation. EuroMET aimed to make an accessible, authoritative teaching and learning environment for meteorology in Europe, and it has certainly achieved that goal. Additionally, institutions and teachers wanting to create new resources in the future should consider using the EuroMET tools and interface, and thereby contribute to the

enrichment of this unique pedagogical and knowledge resource for meteorology.

The student prize winner

ChemVISU is a piece of software that was doubly recognised at the 1998 EASA competition in Oxford. It won a prestigious EASA award and at the same time the author of ChemVISU, Marco Ziegler, a student from Switzerland, was awarded the prize for the best student project, sponsored by BECTa.

ChemVISU is not an ordinary piece of software. It is a Web site (CD-ROM of the Web site is also available from the author): <http://sgich1.unifr.ch/visu.html>. The site is hosted at the chemistry department of Fribourg University, Switzerland. The name of the project suggests its primary focus: 'Chem' stands for chemistry, and 'VISU' indicates that this project is devoted to visualisation problems in chemistry.

Visualisation plays an important role in today's software industry, and the issue is an active concern for the Web. Visualisation is important in fields of science where researchers, teachers, and students have to deal with things that are often impossible to view directly and are typically complex. There is no doubt that visualisation is especially vital in education with regard to understanding complex phenomena. Chemistry is definitely a field where visualisation techniques easily find many supporters. Students can interact with the images of different molecules and observe atomic structures from various angles. Animation of chemical reactions can help students to get a better idea of how atoms move during chemical reactions. All of these things are difficult to present using conventional paper-based methods and materials. Finally, it should be mentioned that exploring chemistry with all of its beauty displayed in three dimensions can be both fun and motivating.

Marco Ziegler, the author of ChemVISU, realised that the Web already provides vast amounts of resources devoted to chemistry. However, for the student and even for a chemistry professor, it is difficult to find appropriate things and navigate in the ocean of chemistry information one can find on the Web. The author focuses on visualisation issues and provides an overview of the most recently used possibilities to display molecules and chemical reactions using a Web browser. In ChemVISU one will find information about how JAVA, VRML, Chime, ChemDraw, animated gif files, stereo pictures and other modern techniques can be used to support chemistry education. There are annotated links to many web-sites, including where

1. The homepage is no longer accessible, but the description of the software in the EASA 1998 archive is as follows: <http://ltsnpsy.york.ac.uk/ltsnpsych/easa/easa98/ChemVisuinfo.htm>

users can find and download necessary browser plugins and chemical file viewers. ChemVISU also gives an overview of popular chemistry software. In addition, ChemVISU contains links to several major chemistry related databases, where one can search for some particular molecules or look for published papers.

ChemVISU is not merely an annotated list of relevant Web links. Most importantly, it shows how visualisation techniques can be applied in practice. One can find some pre-programmed demonstrations that can be used in lectures on DNA, drug-design (e.g. AIDS drugs, aspirin, etc.), photosynthesis, and proteins. The 'Dynamics' section demonstrates how the dynamics of chemical reactions can be captured and displayed on the Internet. Here one can observe vibrations that occur in different molecules and explore different reaction mechanisms. There is a section on Stereo Chemistry. In the 'Gallery' section one will find classified groups of different molecules, and, of course, in ChemVISU one will find some 'Art' too — all related to chemistry, of course.

In summary, ChemVISU provides more than 600 Mb to be explored, and this does not include the databases and other material which is referenced and annotated and to which users can easily link from within ChemVISU. The resources that ChemVISU provides are for academic use and are free to academic users. This award winning site will be of interest not only for chemistry professionals and students, but also for those in other fields interested in visualisation or in designing a rich web-site to support learning in scientific domains.

A review of the European Academic Software Award: year 2000

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Introduction

THE finals for EASA 2000 took place in Rotterdam (the Netherlands) in November. EASA 2000 was organised in the Netherlands by the SURF foundation, SURFdiensten and the University of Groningen (*cf.* host web site: <http://www2000.easa-award.net>) In this review, we briefly describe the activities and proceedings of the EASA 2000 competition.

Organisation of the competition

The competition is organised in three stages. Stage 1 consists of a call for submissions from all over Europe; entries are not limited to countries with EKMA membership status and they may be submitted in any language¹. In stage 2, entries are sent out to discipline coordinators who work with a team of qualified jurors (teachers, students and technical experts) in the corresponding disciplines. At the end of stage 2, a certain number of the entries are shortlisted and submitted to stage 3 for the final part of the competition (*cf.* Chapter 6 for a more detailed presentation of the stages).

1. Up until now, entries have been in a wide variety of languages ; all entries in one of the languages of the EKMA partnership countries can usually be easily evaluated, as jurors can generally be found in these countries. Other language submissions are accepted, but their evaluation depends on finding a specialist juror in the field who understands the given language.

Stage 1: call for submissions

The process leading up to the final award ceremony in Rotterdam in November 2000 started shortly after the EASA 1998 finals. The initial call for submissions was made in early May 1999, with a closing date of 1 November 1999 (the deadline was later extended to 1 December). Those who wished to submit an application were able to do so during this period — in this initial phase the authors were asked to fill in and submit a Web form describing their software; in the meantime, the Dutch organising team¹ (DOT) checked all of the applications in order to filter out those that were inappropriate² and assign each submission to the appropriate discipline³.

A tremendous amount of time and energy was devoted to publicity and public relations activities. Flyers and posters announcing the event are traditionally provided in English, French and German⁴. In the EASA 2000 competition, 35,000 flyers were provided in English and 5,000 in French; 750 posters in English and 100 in French were also made available; inserts (showing logos of EKMA partners) were issued in English (13,000), French (5,000) and German (20,000).

Of the 293 submissions initially received during stage 1, 274 were selected for entry into the EASA 2000 competition and these then proceeded to stage 2.

Stage 2: Evaluation

The number of entries in EASA 2000 (see Table 1; also see Table 1 in Chapter 3) initially represented an increase of just under 18% compared to EASA 1998 (249 entries initially submitted and 233 submitted to stage 2).

If one compares the statistics between EASA 1998 and EASA 2000, in terms of participation per country (see Table 2), two major changes may be noted:

1. Ester van Heuven, Ellen van Hattem and Bas Cordewener.

2. In stage 1 the incoming submissions were checked and the following criteria were taken into account: was the Web form complete and the content serious? Was there an identifiable relation between the submission, the author, the target group and a higher education institution (rather than, say, a primary or secondary education institution)? Some purely commercial products and solely individually developed applications were refused as no such relation was able to be clearly recognised during the conceptual or developmental phase of the submission.

3. Assigning the submissions to predefined disciplines was a difficult task: some applications were meant for general use, some integrated more than one discipline and some products addressed a particular topic that typically fits in several different disciplines.

4. Language is an important issue of the EASA competition (*cf.* Chapter 8). So far, the publicity material has been provided in the three languages mentioned. Entries may be submitted in a wide variety of languages (*cf.* p. 23, note 1). Jurors are also allowed to use their mother tongue when filling in evaluation forms for stage 2.

Table 1: Stage 2: Entries by discipline

Arts & Humanities	21
Biology, Life Sciences and Environment	20
Chemistry	7
Computer Sciences	25
Disabled	1
Economics	17
Education	24
Education — Electronic learning environment	15
Engineering	33
Generic	4
Languages and linguistics	17
Mathematics	17
Medicine	42
Physics	18
Social and Behavioural Sciences	13
Total	274

- the number of entries from non-EKMA countries has risen from 0.85% to 12.40%; DOT accepted submissions world-wide, considering the event to be an ‘open championship’¹;
- some member countries are stable or show a significant rise in the submission rate (Austria, France, the Netherlands², Norway), whereas others show significant drops (Germany, Switzerland).

Of the 274 submissions to stage 1 of the process, 205 authors responded to the call for stage 2; 189 then sent material in for evaluation in stage 2 (ranging from URLs, CDs, downloadable software, etc.). 183 entries were evaluated by 175 jurors from the different specialist areas. 6 pieces of software were not able to be evaluated correctly due to various problems: insufficient technical documentation, language problems for jurors (*cf.* p. 23, note 1), etc.

Each entry was evaluated an average of 2.2 times; the original intended rate was 3 evaluations per entry (two academics and one student) but this was sometimes difficult to accomplish. After evaluating the entry, the jurors

1. However, the software shortlisted for the finals came solely from extended European countries, from both EKMA and non-EKMA member countries (see Table 4). The EKMA board has stipulated that in future only European submissions will be able to enter the regular competition; if a non-European submission is outstanding, a special ‘non-competing’ category may be created (*cf.* Chapter 8).

2. The submission rate often increases for the host country of the competition.

Table 2: Stage 2: N° and % of entries by country

	1998		2000	
	N°	%	N°	%
Austria	8	3.43%	14	5.11%
Belgium	0	0.00%	12	4.38%
Bulgaria	0	0.00%	2	0.73%
Denmark	0	0.00%	1	0.36%
Finland	0	0.00%	2	0.73%
France	3	1.29%	6	2.19%
Germany	103	44.21%	70	25.55%
Hungary	0	0.00%	1	0.36%
Iceland	0	0.00%	1	0.36%
Ireland	1	0.43%	0	0.00%
India	0	0.00%	1	0.36%
Italy	0	0.00%	2	0.73%
Norway	0	0.00%	6	2.19%
Poland	0	0.00%	2	0.73%
Romania	0	0.00%	1	0.36%
Russia	0	0.00%	1	0.36%
Slovenia	0	0.00%	2	0.73%
Spain	1	0.43%	4	1.46%
Sweden	10	4.29%	9	3.28%
Switzerland	14	6.01%	7	2.55%
Taiwan	0	0.00%	1	0.36%
the Netherlands	5	2.15%	40	14.60%
UK	88	37.77%	88	32.12%
Ukraine	0	0.00%	1	0.36%
Total	233	100%	274	100%
Total not EKMA	2	0.85%	35	12.40%

filled in a form on the EASA 2000 web-site. The criteria included the following aspects: innovation, design and ease of use, European portability, educational materials and approach, evaluation of use (*cf.* 'Stage 3: the finals' for more details).

In earlier competitions there were special categories for student, institutional and commercial entries, but in EASA 2000 these differences were abolished as they no longer seemed relevant: the remaining mandatory factor was that any person(s) could submit an entry in the competition, as long as a strong tie with a higher education institute could be established.

Stage 3: the Finals

Of the 183 evaluated entries, 30 entries were shortlisted and proposed for the finals. The statistics appearing below show both disciplines and countries for the 30 finalists and 10 award winners.

Table 3: N° of finalists, n° of award winners per discipline

	Finalists	Award winners
Arts & Humanities	3	3
Biology, Life Sciences and Environment	3	0
Chemistry	0	0
Computer Sciences	2	0
Disabled	0	0
Economics	2	0
Education	3	1
Education — Electronic Learning Envrionments	1	0
Engineering	3	0
Generic	0	0
Languages and linguistics	2	1
Mathematics	2	1
Medicine	5	1
Physics	2	2
Social and Behavioural Sciences	2	1
Total	30	10

Of the countries submitting finalists, five won no awards¹.

Evaluation process at the finals

At the finals in Rotterdam, all finalists were given a chance to present their software; this was not an actual part of the evaluation process, but more a means of giving the 21 jurors present at the finals a chance to have an overview concerning trends and quality of the submissions.

The following day, each entry was evaluated by two teams of jurors. After a 25-minute presentation by the finalist, the jurors filled out individual evaluation forms, taking into account the following criteria (which corresponded

1. As one may judge through the results of Table 4, EKMA member countries do not necessarily win awards! In EASA 2000, Sweden submitted a finalist but won no award; France had no finalists.

Table 4: N° of finalists, n° of award winners by country

	Finalists	Award winners
Austria	2	2
Denmark	1	0
France	0	0
Germany	7	2
Norway	1	0
Slovenia	1	0
Spain	1	0
Sweden	1	0
Switzerland	1	1
the Netherlands	4	1
UK	11	4
Total	30	10

to the same information as required in stage 2 — the ratings for each criterion went from 1–4, 1 being the lowest and 4 the highest).

The full criteria presented below reflect the results of the evolving evaluation process that started with the first EASA competition in Heidelberg in 1994. Much time and effort had been devoted to improving the criteria over the previous 10 years, from differing points of view (suggestions have emanated from the organising board, the discipline coordinators, the jurors, etc.). Some of the criteria still need to be worked through in order to minimise any remaining ambiguities and possible misinterpretations.

1. Innovation

Is the project novel in approach or in terms of the activities it supports?

Added value: enables activities difficult to carry out by other means; *Distinctiveness*: supports activities not supported by other products; *Effectiveness*: supports novel activities more effectively than other products; *General*: advances the use of technology for education or research within the discipline area.

2. Design and ease of use

Is the product or approach well-designed and easy to use or apply?

Installation/access: product is easy to install or access; *User interface*: user interface is easy to understand and use; and follows appropriate up-to-date standards; *Support*: documentation, on-line help etc. is provided, and is appropriate and of high quality; *Screen design*: presentation and interactions are attractive, effective and appropriate for the target users and tasks; *Transferability*: product can be used on a range of machines available to intended users.

3. European portability

Can the software or approach be used (or adapted for use) across Europe?

Language for use: product is available in different European languages; *Language for support*: installation procedures and support materials are appropriate for the languages of intended users; *Language adaptability*: the product can easily be adapted for different European languages; *Portability of materials*: subject materials are appropriate for use in a range of European countries; *Portability of approach*: approach adopted is appropriate for the different curricula and educational traditions/requirements across Europe.

4. Educational materials and approach

Are the materials and the approach educationally sound?

Users and objectives: target users, learning objectives and intended use are clear and adequately defined; *User needs*: project addresses real user (teacher, learner) needs; *Pedagogical approach*: educational approach is appropriate (e.g. at right level, provides appropriate learning activities and feedback, maintains innovation).

5. Evaluation of use

Has the software been evaluated, and how good is the evaluation?

Thorough evaluation procedure: product has been thoroughly and appropriately evaluated (e.g. by real users in real-life situations); *Results of evaluation*: evaluation provides evidence of the high quality of the product.

At given intervals, the juror teams discussed the evaluations and proposed a general team evaluation of each piece of software. At the end of the day, they also filled in a 'criterion priority form' in order to rate the importance of the evaluation criteria from their individual points of view. These team evaluation forms and the criterion priority forms were then submitted to the organisers, who summarised all of the ratings for a plenary session with all of the jurors present. At this meeting, the award winners were chosen from among the finalists. Entries whose ratings were very different were discussed in detail and a consensus was reached. After a long discussion among the panel of jurors and the organisers, the jurors selected the 10 winners with the highest overall scores. The means for the jurors' weighting of the criteria appear in Table 5¹.

Table 5: Juror weighting of criteria: means

	1998	2000
Innovation	3.4	3.55
Design	3.7	3.60
Portability	2.2	2.40
Education	3.8	3.85
Evaluation	2.8	2.47

The results of the 'criterion priority form' are essential for the final assessment of the team evaluations made by the jurors. For instance, if a piece of software (A) has scored very highly on evaluation of use, but lower on education, and a piece of software (B) has scored very highly on education but lower on evaluation of use, both (A) and (B) will initially have an equivalent number of points in total. However, since the jurors, by using the 'criterion priority forms', attribute a higher value to education than to evaluation of use (see Table 5), then software (B) will score more highly overall.

The figures in Table 5 show that education has the highest rating, followed by design and innovation. In our view it is fundamental that education continues to remain the most important issue; a piece of software that has excellent educational content should be considered to be more valuable than one in which only the design or innovative aspects are outstanding. Innovation has sometimes been a difficult criterion to evaluate over the past 10 years. In the first 1994 competition, the 'criterion priority form' was not yet used and this created confusion between those who thought innovation and design

1. The jurors did not have access to previous means ratings of the 1998 EASA competition.

alone were much more important than educational issues and vice versa. Innovation can of course be a tricky issue: does this criterion mean one should solely create new ideas, or can known ideas/technology be used in an innovative way? This was one of the points which arose during the discussion at the final plenary meeting in Rotterdam. Evaluation of the software by users and European portability were considered by jurors to be less important; like innovation, evaluation of use is also rather complex since the jurors cannot necessarily assess to what extent the software has been effectively used and evaluated. Even though the jurors considered European portability to be less important than other criteria, the EKMA board believes European portability to be a significant category and hopes it will be emphasised in future competitions. In accordance with this viewpoint, a special award for 'excellent European focus' was awarded as in 1998. In actual fact, it may not be that jurors really consider European portability to be unimportant, but rather that this criterion is also difficult to determine; for instance a computational linguistics program in a particular language (say a grammatical checker in French) cannot be merely translated into another language; the whole underlying linguistic analysis must be formalised in each individual language. One is therefore not only specifying interface translation of particular software but conceptual translation and taking into account varying cultural, social, political, etc. issues from one European country to another. Some pieces of software are easily 'portable' and others are not.

The award ceremony took place the following day, during the SURF education day, in the World Trade Centre in Rotterdam. The Dutch Minister of Education, Loek Hermans, presented the ten awards to the winners. He stated that the European Academic Software Award brings together three important elements: competition, clustering and internationalisation. Of course, one of the aims of EASA is to boost the creation and distribution of innovative educational applications within Europe. This in turn could help to counterbalance the growing influx of educational materials from America.

Remarks by different people at the finals

At the finals, we visited each booth and suggested the finalists send us their remarks concerning the competition (stages leading up to finals and the event in Rotterdam); discipline coordinators were also contacted; after the awards we sent off an electronic mail message specifying this request to both the juror and finalist discussion groups. We explained that these quotations would be used in an article about EASA, and would also be valuable for organising future EASA competitions. In December 2000 we received several messages from finalists who won an award and from some partic-

ipating jurors and discipline coordinators. Unfortunately, no finalists not receiving an award contacted us. A selection of remarks from award winners and jurors (which we have made anonymous) appear below. Some positive criticism is also made, and this may well be useful for future competitions.

Award winners and jurors: positive experience Overall, award winners were interested by several issues at the finals and seemed to appreciate the following aspects:

- good opportunities to show main features of software, discuss software design with other finalists, and make contacts
- public acknowledgement of work
- programs designed by several people were able to compete with large-scale projects
- participation in EASA may help with future funding for maintaining and improving software

Participating in the EASA 2000 finals in Rotterdam was a stimulating and informative process. The judging was rigorous and thorough, and I felt that I had been given good opportunities to show and explain the key features of [our] software. Preparing the presentation and exhibition booth display helped me to reflect on the product and its features, and the questioning during the judging process gave me another perspective on our work and its future development. I was impressed by the quality of the other products in the finals and I found it very helpful to be able to discuss software design with the other finalists. The interest shown in [our software] by delegates at the SURF conference led to several useful contacts and interesting possibilities for further applications. I was surprised and delighted to receive the Award, and felt privileged to have participated in the event. [...] The other members of [our] team are all very pleased at this public acknowledgement of our work (award winner).

I liked [the competition]. At Rotterdam, I found things well organised, so it was easy to take part in the procedure. As always, there was not enough time to get to know each other... I was at first quite surprised how much it all concentrated on educational software, but at last at least the jury appreciated research projects as well. And I was, of course :-), especially glad that programs designed by one or two persons could compete with obviously well-funded big projects. So it seems to me that the evaluation process went quite beyond the surface (award winner).

Having won the prize is pretty important for us because it helps to acquire new funds that we need to expand and maintain [our software] (award winner).

The two most exciting strands of the conference were being able to see such high-quality computer aided learning (CAL) software being developed across Europe, and to have such a high-profile opportunity to disseminate our work. It was also extremely valuable being able to communicate with other developers, and discuss issues and compare experiences related to developing software for Higher Education in our respective countries. It was also rewarding having so many people eager to try out and talk to us about our software on the SURF Education Day (award winner).

Jurors also seemed to find the experience very worthwhile and fair:

Overall, my impression of the EASA finals was a very positive one. [...] I would like to stress that participating has also been an immensely interesting, informative and rewarding experience all the way through. In two words: very worthwhile (student juror).

Our [juror] discussions, albeit brief, gave room to the very different takes on a given product, and made our joint decision feel as fair as we could hope to be (student juror).

I had participated in EASA 1998 as a juror during stage 2, but EASA 2000 was my first experience as a juror during stage 2 and at the finals. I found the experience highly interesting: it was quite clear to me that a lot of theoretical work had been put into the evaluation criteria. It was also very rewarding to work with a team of jurors from different backgrounds and I liked the fact that there were experienced jurors from previous finals who were able to convey their crucial experience. I am now very keen to continue the experience in EASA 2002 in Sweden! (juror).

Finalists and jurors: advice and suggestions for improvement One award winner gave advice for presenting software at the finals: 'One thing I know you have to avoid is to dive into technical details, being in the finals means that you have created complicated software, everybody will understand that.' Of course, some finalists may be led to believe that the quality of the presentation at the finals could influence the jurors' decision. However, we do believe that the juror teams were well aware of this issue and were able to differentiate between the quality of the software itself and the presentation in a stress-inducing situation.

Another award winner found that little information was given between stages: 'Submission was not complicated, and even if we were not informed about the proceedings during long intervals, everything worked out well in the end.' The communication aspect of the competition is crucial and although DOT made a fundamental effort in this sector, this needs to be borne in mind in future competitions.

Jurors found it very rewarding to work with others from different backgrounds; however, certain jurors felt that more work should be done on explaining statistics and (weighting and interpreting) criteria more thoroughly in future competitions. One juror suggested that explanations of how statistical information is used be distributed to jurors at the onset of the finals, so that less time is devoted to the explanation of this process, therefore leaving more time for the in-depth discussions on finalists' software. Another juror suggested that some of the criteria still need to be improved for future competitions (for instance, portability and evaluation of use).

Jurors we spoke to after the plenary session were satisfied that the whole process had been 'fair' and that those who won an award deserved to. The jurors and organisers were unanimous about the overall quality of the products, and, as Wim Liebrand (former vice-president of EKMA) mentioned during the award ceremony, believed that the 30 finalists were in fact all winners, in so much as their very high-quality software had been selected for the finals.

Conclusion

All of the people who were present at the finals found that the competition was well organised. A certain number of changes were made during the EASA 2000 competition, which contributed to this impression. Among these were:

- rotation of disciplines to be judged by EKMA member countries, ensuring that EASA awareness was boosted in each country; more people and institutions were therefore contacted and made aware of the competition
- judging tasks assigned before the actual submissions were made; discipline coordinators thus had more time to find jurors
- appropriate Internet domain names secured (www.easa-award.net and www.ekma.net); a web-site structure was also built and EASA news lists were initiated
- copyright license granted by author to EASA for use of the software during the competition
- intensified integration with a national conference (SURF Education day), adding to the general impact of both the competition and the conference
- extra attention to paper and online publicity
- added sponsoring by commercial parties; this improved PR possibilities substantially.

Of course, several aspects were then mentioned for overall improvement of the competition:

- refine the evaluation criteria in order to diminish any remaining ambiguities and/or possible misinterpretations
- improve the publicity and general communications area, so that a larger public is informed all over Europe
- increase the number of evaluations per entry
- augment the effort put into evaluation reviews for participants (both those who make it to stage 3 and those that do not)
- evaluate the possibility of holding a national conference during the finals
- seek further funding (an attempt was made to gain EU funding in 2000 through the Socrates/Minerva programme, but unfortunately this did not succeed).

Wim Liebrand summed up the utmost importance of EASA for academics: 'By organising a competition it is possible to make innovative educational applications known to a wide public. Everybody knows that in the academic world a lot of great products are developed, but they stay on the shelf. That is a pity. [This competition is interesting because] you are sure of constructive judgement about your submission by an international jury and [doors are opened to] a broad European network of developers'.

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- [1] Brown J. (2001), *European Knowledge Media Association & European Academic Software Award Briefing*, March, 5 p.
- [2] Cordewener B. (2001), *EASA 2000 Evaluation Report. Activities and proceedings*, 16 p.
- [3] Spector M., Shi L., Sruogis V., Jiong Y. (1999), 'A review of the 1998 European Academic Software Award Competition', *Research Dialogue in Learning and Instruction*, 1, 73–81 (republished here, cf. Chapter 3).

Table 6: Winners of EASA 2000 (alphabetical order)

CALMA

Michael Clarke
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United Kingdom
Arts & Humanities

The **Calma** courseware package enables the creation and use of critical listening exercises that link text, graphics etc. to specific time points on any CD, thereby avoiding copyright restrictions. The software can be integrated into courses using suggestions from the Calma handbook, in combination with practical ideas for independent study contained on the student worksheets. Uses include the creation of listening guides, commentaries, and listening exercises prompting detailed and directed aural analysis. The software can also be used to create dictation exercises and stylistic recognition tests, utilising the flexible access to the CD and its ability to import graphics and other media types.

<http://www.hud.ac.uk/calma.html>

Cinderella

Ulrich Kortenkamp

Institut für Informatik, Freie Universität, Berlin

Germany

Mathematics

Cinderella is a piece of web-enabled interactive geometry software. Besides being a drawing tool for exact constructions it supports animations and true interaction with the construction while retaining all geometric properties. Furthermore, its built-in geometric theorem proving engine is used to analyse students' constructions, checking them for validity and providing adaptive hints.

<http://www.cinderella.de>

CommuniCAT

Sarah Corcoran

HE institutions across Europe

European Project

Linguistics

CommuniCAT is a multilingual, computer-adaptive test of language ability which aims to make European language assessment accessible and meaningful to users throughout the world, resulting in increased international mobility for workers, students and others.

<http://www.alte.org>

Special award (excellent European focus):

CSP

Derek Morrison

University of Bath

United Kingdom

Arts & Humanities

The project demonstrates how collaboration across five European universities produced a learning resource of benefit to all. **CSP** is a set of multimedia CD-ROMs with Web links, which enables comparison of social policies relating to unemployment and long-term care across countries of the European Union.

<http://www.bath.ac.uk/e-learning/cdntl>

CTE

Stefan Hagel
 Österreichische Akademie der Wissenschaften, Vienna
 Austria
 Arts & Humanities

The **Classical Text Editor** project was started because none of the existing word-processors met the needs of scholars working on editions of texts. In continuous discussion with editors, a program was designed which combines the feeling of a modern interface with the possibility to deal easily with the complicated arrangement of texts and notes that are indispensable in scientific editions. Keyboard support for many different scripts is included as well as various specialised tools, e.g. for working with sigla. The same text may be printed as a camera-ready copy or exported as HTML or SGML.

<http://www.oeaw.ac.at/kvk/cte>

Focus

John Oates
 Faculty of Education and Language Studies, The Open University
 United Kingdom
 Social Sciences

Focus is a CD-ROM based application for training and research in the systematic observation of behaviour, developed at the Open University in collaboration with the BBC. Using digital video and audio files, along with hypertext, it includes functions for analysing and coding behaviour, together with extensive teaching materials on observational methods. It has been designed as a 'shell' that is easily versioned for different contexts.

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Headache Interactive

Christof J. Daetwyler
 Dept. For Educational Media, University of Berne
 Switzerland
 Medicine

Headaches are one of the most common diseases; nevertheless most medical doctors (with the exception of neurologists) are not able to recognise the different types clearly and treat them well. This program teaches students, through usage of a specialists' analysis, how to diagnose headaches. To provide self-assessment, a quiz-section has been added in which simulated patients provide realistic answers to students' questions.

<http://medweb.unibe.ch/kopfschmerz>

ISE

Jurgen Kirstein
 Technical University, Berlin
 Germany
 Physics

Interactive Screen Experiments (ISE) isn't a closed piece of software but a new concept of using multimedia technology in education. It is designed to represent real experiments in physics within multimedia learning environments which support individual learning processes.

<http://www.ifpl.tu-berlin.de> (German);

<http://bifrost.physik.tu-berlin.de/~post> (English)

SimQuest

Ton de Jong

Universiteit Twente, Enschede

the Netherlands

Education

SimQuest is an authoring system for creating applications for scientific discovery learning. SimQuest applications consist of a computer simulation and integrated (multi-media) learning support (assignments, explanations, model progression, monitoring tools).

<http://www.simquest.to.utwente.nl/simquest>

Special award (outstanding innovation in its field):

Visual Quantum Mechanics

Bernd Thaller

Institute of Mathematics, University of Graz

Austria

Physics

Visual Quantum Mechanics is a systematic effort to use computer generated animations in order to push the teaching of theoretical quantum mechanics to an even higher level. This goal is reached because the visualisation makes complicated results more understandable and motivates the inclusion of topics that are often ignored or mystified.

<http://www.kfunigraz.ac.at/imawww/vqm>

Table 7: Other finalists of EASA 2000 (alphabetical order)

Companion

Thomas Brückner

University of Karlsruhe

Germany

Computer Science

<http://www.vikar.de/companion>

CompEdu

Eloi Klein & François-Xavier Hillion

Rotal Institute of Technology

Sweden

Engineering

<http://www.elearning-energy.com>

Discovering Science

Stuart Freake
 The Open University
 United Kingdom
 Biology
<http://www.open.ac.uk/science/discover>

EASE

Tim Kelly
 University of Warwick
 United Kingdom
 Linguistics
<http://www.ease.ac.uk>

Educating Effective Managers

Andrew Remely
 The Open University
 United Kingdom
 Economics
<http://www.oubs.open.ac.uk>

European Geography Test

P. J. C. Steenstra
 Universiteit Utrecht
 the Netherlands
 Biology
<http://www.egt.geog.uu.nl>

Genbill

Dieter Lorenz
 University of Bielefeld
 Germany
 Biology
<http://www.techfak.uni-bielefeld.de/~dieter>

Histology Explorer

Jens Dørup
 University of Aarhus
 Denmark
 Medicine
<http://www.hi.au.dk/jd> (author)
<http://www.health.au.dk/microscope> (program)

Hypernote

Peter Twining
 The Open University
 United Kingdom
 Education
<http://kn.open.ac.uk/public/document.cfm?documentid=4716>

Multimedia Software

Hans-Joachim Mittag
University of Hagen
Germany
Mathematics
<http://www.fernuni-hagen.de/STATISTIK>

POM-master

Norbert Trautmann
University of Karlsruhe
Germany
Economics
<http://www.wior.uni-karlsruhe.de/neumann/personal/trautmann.html>

Rabilda (withdrawn by finalist)

Lars-Gunnar Hartveit
Norway
Medicine
lars.gunnar.hartveit@hl.telia.no

Scopoli

Bojan Doljak
University of Ljubljana
Slovenia
Medicine
<http://www.ffa.uni-lj.si/fb/scopoli>

Sequence

W. Dijkstra
Vrije Universiteit
the Netherlands
Social Sciences
<http://svn.scw.vu.nl/sequence>

Sunlight and You

Keith Brown
University of Bath
United Kingdom
Medicine
keith.brown@bath.ac.uk

TCM

Frank Dehne & Henk van de Zandschulp
Vrije Universiteit / Universiteit Twente
the Netherlands
Computer Science
<http://wwwhome.cs.utwente.nl/~tcm>

The Interviewer

Peter Hartley & Richard Gibson

University of Huddersfield

United Kingdom

Education

<http://www.shu.ac.uk/cme/interviewer>

VC

Jose A. Carrasco

Universidad Miguel Hernandez

Spain

Engineering

<http://www.controlstudio.com>

Virtual Campus

Richard Thompson

TekniCAL.com

United Kingdom

Electronic EL

<http://home.teknical.com/vc>

Virtual Reality Ergonomics Tutorial

Dietmar Gude, Eike Branahl, Wolfgang Laurig

University of Dortmund

Germany

Engineering

<http://www.ergonetz.de>

Experiences from the European Academic Software Award: year 2002

Göran Petersson

EKMA chair from 2002

Council for the Renewal of Higher Education and Swedish Net University, Härnösand, Sweden

goran.petersson@netuniversity.se

Effective infrastructure and organisation reduces effort and increases focus on quality issues

THIS chapter describes the most recent EASA competition, held in Sweden in 2002. In it we describe how the organisation of the competition drew on the combined experience of previous years, and make recommendations for the future, some of which appear in the text in italics.

The European Academic Software Award 2002 (EASA 2002) was organised by the Council for the Renewal of Higher Education, Sweden, together with the Blekinge Institute of Technology, with the finals located in Ronneby on 23–25 September. The Council for the Renewal of Higher Education has been a member of the board since the initiation of the European Knowledge Media Association (EKMA) in 1994. Since the beginning, the Swedish representatives have emphasised the involvement of the end users, i.e. the students, in the jury process. Although not always easy to find, student jurors are now included as regular jurors during the whole evaluation process.

To recruit students we found it most appropriate in EASA 2002 to ask the expert jurors to involve students in their departments.

Procedures and preparation for EASA 2002

The main framework of EASA 2002 was decided by the EKMA board but all the executive work, including evaluations and local organisation, was accomplished by the Swedish Organising Team (Göran Petersson, Leif Lagebrand, Lasse Bourelus and Malin Johansson). EASA 2002 mainly followed

the procedures employed at EASA 2000 with a couple of improvements recommended by the Dutch organisers of the 2000 competition.

Each country marketed the EASA 2002 competition by distributing brochures in printed as well as electronic form. The brochure was produced by the Swedish Organising Team. Although not statistically proven, we have a strong feeling that the intensity of the marketing probably affected the number of applicants from each individual country.

In order to recruit more countries the marketing should be extended to a network in non-member countries.

The preparations for EASA 2002 were delayed due to unforeseen changes in the originally appointed organising team which resulted in a postponement of the deadline for the submission of stage 1. However, thanks to the extraordinary efforts of the replacement team members, the subsequent deadlines of EASA 2002, up to the finals, were kept.

This emphasises the importance of a continuous national supporting organisation including individuals with involvement from previous EASAs and also the EKMA committee.

EKMA — a learning organisation

In order for the competitions to run smoothly, effective organisation is needed. Over time, the submissions have become more sophisticated and so have expectations — not only about the submissions themselves but also regarding the organisation. Since much of the work of the competition, in particular that of the discipline coordinators and jurors, is done voluntarily, efforts must be continuously made to perfect the procedures. It is therefore important to learn from previous competitions by close follow ups and reflections by the EKMA board. EKMA is the crucial link between competitions, allowing a common interpretation of the previous competition and a transfer of experience to the next competition. After EASA 2000 in Rotterdam, advice was offered to the next organiser, based on the experiences of the Dutch team and on comments from the participants, including jurors and contestants (see Chapter 4). Among the main advice from EASA 2000 were: a) improvement of the infrastructure for handling submissions, b) brief pre-presentations of finalists' entries and c) combination of the finals with a national conference.

Technical and organisational refinements in EASA 2002

Database for communication

Leif Lagebrand of the Swedish Organising Team constructed a web-accessible database for all entries and reviews. The database turned out to be stable with very few interruptions to service. By creating a selective log in system, different categories of participant — contestants, jurors, discipline coordinators and organisers — were able to access, read and edit their respective parts. The database allowed instant displays of the submissions as lists of entries and also provided overviews defined by discipline or country.

During the reviewing process the scores of the reviewers were displayed. When the last review was performed, the scores of all entries could be displayed and ranked. The Swedish Organising Team recognised that the database reduced much of the workload that previous EASA-organisers had experienced.

Thus, by taking advantage of up-to-date technology, the submissions and review process was made much smoother.

The database support also included a system from which it was possible to send information to selected categories of participant by means of email lists.

We found it very important to provide the contestants with continuous information about the handling of their submissions.

Entry refinements

The submission process mainly followed the description on page 23 [see Chapter 4]. However, in order to make the process still smoother, some refinements were made which can be summarised in three steps:

- The same form could be used for both stage 1 and 2 by displaying all fields at stage 1 but labelling those fields mandatory for completion at stage 1. At stage 2 all fields should be completed.
- The contestants received an ID (their own email address) and password to be used for correction of the fields until the deadline.
- The discipline coordinators were able to view the entries, thereby facilitating the process of recruitment of jurors.

Evaluation process and jurors

The criteria for evaluation were almost identical to those used for EASA 2000, with only minor updating by the EKMA board.

The discipline coordinators (DC) were recruited from different countries. About half of them were from previous competitions and half were recruited from experienced jurors. The DCs, in turn, recruited the jurors, mostly based on suggestions from previous years. In some disciplines the jurors came from only a few countries. The DCs had to remind several of the jurors to complete their reviews. The jurors could see other jurors' reviews and could also review other submissions, in addition to the evaluations they had been asked to perform. About five of these reviews were received, but were excluded from the final analysis.

Each entry was reviewed on line by two experts and in most cases also by one student. Most often the student was recruited by one of the jurors. The DC had the responsibility to check the jurors' reviews which during EASA 2002 was facilitated by the access to the database. After completion of the review process, the results were monitored promptly and the organising team could announce the 30 entries to be invited to the final.

After the evaluation process, the authors of the entries selected for the final were informed by email and the authors of the remaining entries received the reviewers' comments as feedback. The feedback was much appreciated by the contestants.

In total 171 jurors from 11 countries were involved in the evaluation process.

Finals procedure

The finals had three parts very similar to EASA 2000, with one part performed each day. The first day the contestants set up their software in a booth in the exhibition area, making sure that it was running, including internet connection, which is increasingly used by almost all competitors. At the end of the first afternoon the finalists made a five-minute PowerPoint presentation about their entry for the final juror committee. The committee was split into two groups, viewing half of the entries each, with the emphasis on those entries that the group would not evaluate the day after. These brief pre-presentations gave an important flavour of the general level and standard of the entries.

The individual preparation for the preview varied and, because of the importance of this part, future EASA organisers should further stress the need for contestants to prepare properly.

At the finals, 20 jurors participated with one extra juror as stand-in. Each juror team included one student, i.e. in all there were five students.

On the second day, two teams of four jurors reviewed each entry, with each team reviewing eight entries. The time allowed for the review was 30 minutes. Some contestants used a relatively long time for the presentation of the basics of their program. At their final meeting, the jurors found that the optimal timing for the evaluations was 10 minutes for presentation of the software and 10 minutes for questions from the jurors. The remaining 10 minutes was needed for internal discussion by the juror team.

The contestants should have been aware that the jurors had read the description of their entry and should have made use of the time to highlight special features.

All entries were scored with the same protocol used during stage 2. The scores were summarised at the end of the second day and computed by the finals coordinator, Nick Hammond.

On the last morning all finals jurors met to decide the winners. First the procedure in general was discussed followed by a dialogue about the quality. Then the actual results were carefully analysed. Finally, the entries were ranked. In a few cases there was prolonged discussion about the arguments for the rank. Then the committee agreed to the final ranking.

Award

The last part of the competition was the award ceremony which was accompanied with festivities. After a music introduction there were formal speeches by Lars Haikola, the Vice-Chancellor of Blekinge Institute of Technology and chair of the Council for the Renewal of Higher Education, Jonathan Darby, the Chair of EKMA and Nick Hammond, the Chair of the finals juror committee, who announced the winners. The awards were presented by Thomas Östros, the Swedish Minister for Education and Research, who also gave a speech. The award ceremony was documented by the press and followed by a press conference. After a refreshment break the linked international conference, Netlearning 2002, commenced with 400 participants, mostly from Sweden but one third from abroad.

Combination with conference and finances

During the conference, all finalists displayed their contributions for the delegates in the exhibition area, mixed with booths from commercial organisations. Thus, the combination of the competition with the conference

allowed EASA finalists to expose their projects to a larger audience. Conference delegates, in turn, gained the opportunity to see excellent academic software in addition to lectures, parallel sessions and exhibitors. Although the combination of the competition with the conference generated a huge work load with complex logistics regarding participants taking part in one or both of the events, many synergistic effects were achieved regarding quality and budget. Financial support from the EU helped to balance the budget.

Results

The total number of entries for stage 1 (pre-selection) in EASA 2002 was less than in EASA 2000, 154 compared with 293. However, at stage 2 (the evaluations), the numbers were more alike, 146 compared with 183. Thus, a smaller number of submissions were excluded and relatively more entries completed stage 2 than in EASA 2000.

Disciplines represented

In both stages 2 and 3, twelve disciplines were represented with a fairly even distribution between disciplines, though with medicine dominating (Table 1).

Table 1: The number of entries, by discipline, at each stage of EASA 2002

Discipline	Stage 2	Stage 3 Finalists	Winners
Arts & humanities	12 (8.2%)	2 (6.7%)	
Biology, life sciences, environment	11 (7.5%)	2 (6.7%)	1
Computer sciences	17 (11.6%)	3 (10.0%)	1
Economics	11 (7.5%)	2 (6.7%)	1
Education	11 (7.5%)	2 (6.7%)	
Electronic learning environments	13 (8.9%)	3 (10.0%)	1
Engineering	9 (6.2%)	2 (6.7%)	2
Language & linguistics	10 (6.8%)	2 (6.7%)	
Mathematics	4 (2.7%)	1 (3.3%)	1
Medicine	32 (21.9%)	7 (23.3%)	2
Physics	9 (6.2%)	2 (6.7%)	1
Social and behavioural sciences	7 (4.8%)	2 (6.7%)	
Total:	146 (100%)	30 (100%)	10

Countries represented

In the initial review submissions, 16 countries were represented, i.e. three times more countries were represented in the competition than in the EKMA-board. The countries involved in EKMA were overrepresented in terms of numbers with particular dominance by the UK (with more than one third of the entries) followed by the hosting country, Sweden, though with less than one fifth of the entries (Table 2).

Table 2: The number of entries, by country, at each stage of EASA 2002.

Country	Stage 2	Stage 3 Finalists	Winners
Austria	14 (9.6%)	3 (10.0%)	1
Belgium	2 (1.4%)		
Bulgaria	1 (0.7%)		
Denmark	1 (0.7%)		
Finland	2 (1.4%)		
France	5 (3.4%)		
Germany	18 (12.0%)	5 (16.7%)	3
Ireland	1 (0.7%)		
Italy	4 (2.7%)		
Netherlands	7 (4.8%)	2 (6.7%)	2
Portugal	2 (1.4%)		
Spain	2 (1.4%)		
Sweden	26 (17.7%)	8 (26.7%)	2
Switzerland	8 (5.5%)	2 (6.7%)	1
United Kingdom	52 (35.6%)	9 (33.0%)	1
Total:	146 (100%)	30 (100%)	10

There was a rough correspondence between the number of entries in stage 2 from each discipline and country respectively and those in stage 3. Among the finalists there were two student-led projects — MOPPS and 3DEmbryo (see below).

Reflections and recommendations

Reflections on EASA 2002:

There are a variety of benefits from participating in EASA:

1. The local, regional and national exposure and contacts for the host country of the event itself.

2. The competitors, and in particular the winners, regarded their participation as rewarding and as a sign of merit.
3. The jurors and the competitors experienced a sense of competence enhancement by seeing different entries, sharing ideas and communicating with each other.

The entries have become more and more sophisticated with less emphasis on technology and more on function, content and quality. This of course does not imply that the technological quality is of a lower standard, but that the technology may often be taken for granted, and it is its innovative use that is being presented.

The number of countries represented among the contestants, and also among the jurors, was far greater than the number of countries making up the EKMA board.

EASA 2002 clearly demonstrated the benefit of a revision of procedures and organisation of the competition due to increasing expectations, work load and expenses, but fewer country members involved in the organisation and funding. The combined conference helped to make the overall EASA event more professional and efficient.

EASA 2002 was associated with extra costs due to the initial personnel changes, investment in a new efficient database and the use of a commercial venue.

Added initiatives at EASA 2002 were:

- efficient database structure and maintenance
- same forms for stages 1 and 2
- combination with a conference, which was thereby made international

Recommendations for future competitions:

- reuse the stable database employed at EASA 2002 and make further refinements to make it even more effective
- involve more countries, and improve marketing
- reuse all documents, which should be saved in a database
- reduce costs, use an academic setting as the finals venue
- expose finalists and winners to a larger audience, combine the event with an international conference

References

- [1] *EASA 2002*. http://www.bth.se/llab/easa_2002.nsf

- [2] Moore, S. 'A description of the EASA 2002 evaluation from a student point of view'. *Learning and Teaching Support Network in Medicine, Dentistry and Veterinary Medicine*, Newsletter 01.1, 2002, page 24 http://www.ltsn-01.ac.uk/newsletter/01.1_html/easa
- [3] *Netlearning 2002*. <http://netlearning2002.org>
- [4] Petersson, G. 'EASA — A forum for a gold standard for medical educational multimedia?' *Learning and Teaching Support Network in Medicine, Dentistry and Veterinary Medicine*, Newsletter 01.1, 2002, pages 23–24 http://www.ltsn-01.ac.uk/newsletter/01.1_html/easa
- [5] Petersson, G. 'EASA (European Academic Software Award) — how can an award support the design of e-learning?' Oral presentation. *Online Educa*, December 3–5, Berlin. <http://www.online-educa.com>

Table 3: Winners of EASA 2002 (alphabetical order)

Coach 5

Ewa Mioduszevska, Ton Ellermeijer
 Amsterdam Mathematics, Science & Technology Educ Lab Inst (AMSTEL)
 Netherlands
 Physics

Coach 5 is a versatile, activity-based environment, which has powerful authoring tools to design tailor-made activities for different students' levels, age 10–20. An activity can consist of windows with texts, pictures, video clips, data presented in forms of graphs, tables, meters or digital values, graphical or numerical models, control programs, links to internet sites to bring extra resources for students.

<http://www.cma.science.uva.nl/english/products/coach5/coach5.html>

Design It — MachineMotion 2002

B. H. de Roode
 Red Software
 Netherlands
 Engineering

Design It MachineMotion aids designers of production machines to design this complex motion pattern of a machine. Complexity is reduced by describing motions with a state transition diagram. Instead of describing motions in a continuous position-time graph, the motions are now described by discrete steps and transitions. Important parts of the motions can be denoted. Relations between motions can be defined.

barry@tlo.nl

Table 3: Winners of EASA 2002 (alphabetical order) (*cont.*)

E-chalk

Lars Knipping
Freie Universitaet Berlin
Germany
Electronic learning environment

E-chalk (Electronic Chalkboard System) is a Java software system that combines the features and advantages of the traditional chalkboard with the multimedia features of a modern distance teaching environment: The teacher in a classroom can write on a digitising device (electronic board, screen-sensitive rear projection, digitising tablet). Additionally, he/she can enhance the board content with pictures taken from a hard disc or the Internet, with formulas evaluated automatically from handwritten input and with function plots.

<http://www.e-chalk.de>

GeoGebra

Markus Hohenwarter
Univ of Salzburg
Austria
Mathematics

GeoGebra joins the abilities of dynamical geometry and numerical computer algebra. The system offers the possibility to manipulate 2D-objects in an algebraic and geometric way. Geometry and algebra in this sense are equal partners.

<http://www.geogebra.com>

KaraToJava

Raimond Reichert
Dept. Computer Science, ETH Zürich
Switzerland
Computer Science

KaraToJava is a learning environment for introductory programming courses emphasising the fundamental concepts of algorithms and data structures. Students write programs by constructing finite state machines — the most simple, yet powerful computational model. Once the novices have mastered programming Kara, MultiKara offers insights into parallel programming with a wide range of demanding exercises. LegoKara connects programming to the physical robots. JavaKara offers a smooth transition to a professional programming language.

<http://www.educeth.ch/informatik/karatojava>

MedicMED

Michael Reng
Dept. of Internal Medicine, Univ clinic of Regensburg
Germany
Medicine

Table 3: Winners of EASA 2002 (alphabetical order) (*cont.*)

MedicMED developed a generic XML-structure for medical cases (Medic-CaseML), based upon international e-learning standards. This structure allows separation of form and content — of presentation information and medical data. MedicCaseML provides all information to parse a medical case into non-specific industry-standard e-learning software without any need for proprietary tools.

<http://www.medicmed.de/easa>

MOOPPS

Martin Josef Geiger
University of Hohenheim, Stuttgart
Germany
Economics

MOOPPS (A Multi Objective Optimisation System for Production and Project Scheduling) is a student-led research project on scheduling problems under multiple objectives in management science. MOOPPS gives support by integrating numerous algorithmic ideas in a single computer system.

<http://www.moo-web.com>

Protein Purification

Andrew Booth
University of Leeds
United Kingdom
Biology, life science, environment

This is a simulation program, which allows students to try out protein purification procedures. The objectives are: 1. to provide students with an understanding of the strategic issues involved in designing realistic protein purification schedules. 2. to allow students to model such strategies in a realistic manner.

<http://www.fldu.leeds.ac.uk/courses/BIOC2060/SwingPP/ProtLab.html>

Svalsim — Medium

Uno Fors
Dept. of LIME, Karolinska Institute
Sweden
Engineering

The **Svalsim** system is focusing on understanding the complex petroleum geology exploration process. Svalsim is highly adaptive to the skill level of the learners since it contains enough data for a detailed study or for only introduction to the exploration challenges. The user has full control over the selection of data and all analysing steps. A variety of real data is available, and an important part of the learning is to prioritise and analyse datasets.

<http://www.lime.ki.se/cul/activities/cal/projects.htm>

Table 3: Winners of EASA 2002 (alphabetical order) (*cont.*)

3D Embryo

David Örtoft, Hanna Reuterborg

Karolinska Institute

Sweden

Medicine

The **3D Embryo** student-led project applies true 3D-animation and interactive 3D Web technology to visualise the early development of a human being, specifically the first four weeks. 3DEmbryo is meant to speed up the process of getting a mental picture of the developing embryo. It is also meant to serve as a common point of discussion for surrounding subjects like molecular biology, pathology, and physiology, both in educational and research communication contexts.

<http://ict.ki.se/projektmedel/rapport/01105ict/start.html>

Table 4: Other finalists of EASA 2002 (alphabetical order)

ACTAS — Economic Accounting Assistant

Stefan Kooths

Inst for Industrial Economics, Univ. of Muenster

Germany

Economics

Helping students to cope with all aspects of national and international accounting in the field of economics is the domain of **ACTAS**. It allows the user to browse through the relevant system of accounts, explore their contents, look for entries and corresponding cross entries, enter transaction values and observe their impact on main aggregates such as GDP, generate charts for time series or structural analyses etc.

<http://www.wiwi.uni-muenster.de/iif/actas>

Animated Logic Tutor

K W Rochford

Univ. of Bradford

United Kingdom

Computer science

Animated Logic Tutor is a visual aid to the teaching of the theory and operation of digital logic gates as used in computer architecture by using interactive displays and animated diagrams. To supplement the text book teachings of computer digital logic by interactive student participation producing kinetic representations of logic gate action.

<http://www.staff.brad.ac.uk/kwrochfo>

Table 4: Other finalists of EASA 2002 (alphabetical order) (*cont.*)

asix4web

Peter Rössler

Inst of Computer Technology, Vienna Univ of Technology

Austria

Computer science

asix4web provides a Web-accessible simple hardware environment to designers of ASICs (Application Specific Integrated Circuits) with the purpose that even beginners should be able to test its behaviour on a real hardware.

<http://www.ict.tuwien.ac.at/asicdesign/asix4web>

Assessing the periodontium

N J A Jepson

The Dental School, Univ. of Newcastle

United Kingdom

Medicine

This program allows the exploration, interaction with and review of information in ways that are particularly suited to assessment of the periodontium where an appreciation of the dynamic cellular processes and ultrastructural changes that occur in disease is vital to understanding treatment strategies. Instructional content is appropriate to both undergraduates and general dental practitioners and is presented as a series of related but discrete fully referenced modules each of an appropriate lesson length.

n.j.a.jepson@ncl.ac.uk

ATHENA

Bertil Rolf, Charlotte Magnusson, Peter Anderberg

Blekinge Inst of Technology

Sweden

Arts & humanities

The software supports argumentation pro/contra in matters combining expert knowledge and socially controversial values. **ATHENA** can be used 1) for a short course teaching the basics of informal logic instructing students of software use and to support expert duels and 2) enable teachers in higher education to develop similar course modules in various domains where expert knowledge generate social controversy.

<http://www.athenasoft.org>

BAILANDO

Gustav Öquist

Uppsala University

Sweden

Language & linguistics

Table 4: Other finalists of EASA 2002 (alphabetical order) (*cont.*)

BAILANDO (Better Access to Information through Linguistic Analysis and New Display Organisation) look at the potential enhancement of the Rapid Serial Visual Presentation (RSVP) format by adapting the presentation speed to the linguistic characteristics of the text. RSVP is a well-known dynamic text presentation format that requires very limited screen space compared to traditional text presentation.

<http://stp.ling.uu.se/~gustav/bailando>

CaseMaster

Örjan Johansson, Mikael Karlsson

Umeå university

Sweden

Electronic learning environment

CaseMaster has involved the creation of a platform that can be used in a range of interactive and pedagogical contexts, including that of problem-based learning. The platform has facilitated the creation of a number of dynamic scenarios with different starts and endings, and where it is possible to put together images, multimedia, text, video and documents to events in a specific scenario.

<http://casemaster.educ.umu.se/easa>

CVS — Creating Virtual Seminars

Joachim Kornelius

Inst of Translation and Interpreting (IUED), Univ of Heidelberg

Germany

Language & linguistics

These translation courses are designed to provide students with a basic knowledge of modern translation methods, as well as an introduction to English technical translation. Each course introduces the student step-by-step to a special field of topical interest. Using carefully-selected authentic texts, the student is introduced to all skills necessary for modern-day translation: abstract-writing, linguistic analysis, establishing terminology and collocations, researching relevant information and finally, translating the text.

<http://www.iued.uni-heidelberg.de>

Dollar street

Anna Rosling Rönnlund, Ola Rosling

Gapminder AB

Sweden

Social sciences

Table 4: Other finalists of EASA 2002 (alphabetical order) (*cont.*)

Dollar Street displays the world as a street. The street number is the family income and all people in the world live somewhere on this street. By clicking the houses it is possible to make home visit and walk around in all rooms. Vital functions of the households are focused (such as electricity, water supply and sanitation). In video sequences people of the household tell about every day life and guide users through the environments.

<http://www.gapminder.org>

GABEK-WINRELAN (Windows Relation Analysis)

Josef Zelger

Dept. of Philosophy, Univ. of Innsbruck

Austria

Social sciences

WINRELAN according to the method **GABEK** (Ganzheitliche Bewältigung von sprachlich erfaßter Komplexität) will promote a holistic understanding of complex social phenomena and facilitate decision-making that is accepted and supported by those concerned. Verbal data are at first represented as a formal indexing system by GABEK and then processed by means of a multidimensional content analysis. Automated, computerised steps of data processing are accompanied by the semantically work of the researcher.

<http://www.uibk.ac.at/c/c6/gabek>

Jess — Veterinary Emergency Clinical Case Simulator

Paul Crawford, Sonya Powney, Nick Short

Royal Veterinary College

United Kingdom

Medicine

This Flash authored package provides an interactive, multi branching simulation of a clinical emergency in a dog. It enables students and clinicians to test and improve their clinical knowledge in responding to such an emergency without compromising the health or welfare of a real pet.

<http://www.rvc.ac.uk/review/Cases>

LUSID

AC Marshall

University of Liverpool

United Kingdom

Educational

LUSID (Liverpool University Student Interactive Database) is a Web-based Personal Development Planning (PDP) tool. It supports recording, planning, reflection, skills auditing, automatic CV construction, skill guidance and a reporting facility and can be thought of as a companion to MLE systems such as WebCT and Blackboard.

<http://lusid.liv.ac.uk>

Table 4: Other finalists of EASA 2002 (alphabetical order) (*cont.*)

<p>NUDOV — National Educational Software for Dermatology and Venereology Mona Bäckdahl, Carl-Fredrik Wahlgren, Uno Fors, Samuel Edelbring Dept LIME, Karolinska Institutet Sweden Medicine</p> <p>NUDOV focuses on creating an educational tool where students can learn and practice the various steps in the clinical decision process within Dermatology/Venereology. The case-based system simulates in a natural way all clinical steps, from the waiting room, through medical history taking, physical exam, diagnosis to treatment suggestions and prescription, including writing the patient record. All interactions are decided by the student. http://www.lime.ki.se/cul/activities/cal/projects.htm</p>
<p>OU Knowledge Network UK James Aczel The Open University United Kingdom Educational</p> <p>The Knowledge Network is an online application that enables staff to explore, share and build knowledge of teaching and learning. It lets researchers and practitioners use their Web browser to publish documents, presentations and media clips to the Web. They can control access to commercially-sensitive or copyrighted work; cross-reference related resources automatically; receive dissemination statistics; and email subscribers. They can do all this without specialised technical or taxonomy skills. http://iet.open.ac.uk/kn</p>
<p>Remote lab at BTH Ingvar Gustavsson Blekinge Institute of Technology (BTH) Sweden Electronic learning environment</p> <p>Conventional electrical circuit experiments are conducted remotely over the Internet from different locations simultaneously using an experimental hardware setup in a closed room at BTH. This is neither a simulation nor a SCADA (Supervisory Control and Data Acquisition) application. The engineering students control the instruments in the same way as they used to do in the local laboratory. The only difference is that they do not form the circuits and connect the test probes manually. http://www.its.bth.se/distancelab/english</p>

Table 4: Other finalists of EASA 2002 (alphabetical order) (*cont.*)

Seeing drawing

Sue Gollifer

IT Research & Development Unit (ITRDU), London Inst

United Kingdom

Arts & humanities

Seeing drawing focuses on traditional drawing tools while promoting the new approaches to drawing possible with technology, through the ability to utilise software applications; for example for 3D modelling and to enhance the teaching of formal drawing systems such as projection and perspective. The focus of seeing drawing is to develop the student's awareness of the significance of drawing.

<http://www.seeingdrawing.com>

Spectroscopy + Molecular World

Greg Black

The Open University

United Kingdom

Biology, life science, environment

The **Spectroscopy** CD-ROM is a complete teaching and learning package. It comprises around fifteen hours of interactive work and includes many problems for the student to solve. The incorporation of a molecular drawing tool as the input device through which students provide answers to questions is a major innovation.

g.p.black@open.ac.uk

S207 — The Physical World

Fiona Thomson

The Open University

United Kingdom

Physics

This software forms part of the Open University's introductory Physics course, **S207 The Physical World**. The software comprises: 11 multimedia tutorial packages covering a wide range of topics such as simple harmonic motion, fields and potentials, waves and simple quantum mechanics. The voice of a course team member guides the student through the tutorial, which may include video sequences, simulations, virtual experiments and questions.

<http://physicalworld.org>

universante.org

Bengt Kayser

Faculty of Medicine, Univ of Geneva

Switzerland

Medicine

Table 4: Other finalists of EASA 2002 (alphabetical order) (*cont.*)

Online computer supported collaborative learning of public health concepts between students of different cultural and socio-economical backgrounds. We developed a Web-based learning scenario for teaching community health to medical students in Switzerland, Tunisia, Cameroon and Lebanon. The learning scenario is structured around phases and roles. In order to stimulate social interaction, the activities rely on the confrontation of different national health contexts and different health issues.

<http://www.universante.org>

X-ray files 4 — Part 4: Ionising Radiation

John Stevens

Univ of Newcastle

United Kingdom

Medicine

The X-ray Files 4 is intended to revise and assess understanding of the core of knowledge on Ionising Radiation Protection. It has been designed to guide the user logically through the instructional material, each section building on the knowledge and experience gained in the previous section, with particular emphasis on dental applications. Extensive use has been made of interactivity to hold and stimulate the user's interest. Wherever possible text has been replaced or augmented by graphical illustrations and video sequence simulations to facilitate learning.

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Evaluating academic software: can comparing chalk and cheese be valid, reliable or accountable?

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Introduction

JUDGING the quality of complex entities is fraught with problems and uncertainties, and particularly so when a number of entities are to be compared and, ultimately, ranked in quality. For an academic enterprise such as the EASA competition, the process should be fair, valid and reliable — and should be seen to be so — at least insofar as this is possible. Is comparing academic software like comparing ‘chalk and cheese’ — an apparent surface similarity hiding such strong underlying differences that no reliable basis for systematic comparisons can be agreed? Or is the comparison perhaps more like a cheese-tasting competition, perhaps judging a ripe Brie, a mature Stilton, a tasty Edam and a smooth Emmental, where a common set of dimensions can be agreed and utilised by the judges with at least some degree of reliability?

This question is in part an empirical one: if the comparison of items of academic software is a fruitless exercise in ranking based on well-intentioned but essentially random choices of the judges, then the evidence from the series of EASA Finals should tell us that this is the case. This chapter focuses on evidence from the judging process at the finals of the three most recent EASA competitions held in 1998 (Oxford, UK), 2000 (Rotterdam, the Netherlands) and 2002 (Ronneby, Sweden).

In particular we examine whether the judgements made at the EASA Finals have met, or indeed can in principle meet, three key criteria: *accountability*, *reliability* and *validity*. In the context of EASA, a judgement is *accountable* if the processes by which that judgement was made are open,

explicit and subject to discussion and refinement. To take our simpler but fictitious European Cheese Award finals, perhaps the entries may be rated separately on dimensions such as appearance, texture, smell and taste, and these dimensions and their relative importance can be openly discussed. But while the process may be accountable, it doesn't necessarily guarantee that the judgements are sound: two judges may have quite different feelings about what tastes good! For EASA, then, as for the cheese competition, a judgement should also be *reliable*: this is indicated by the extent to which the judges independently agree about their judgements. Even this is not sufficient — our expert judges may agree, but perhaps the basis for their judgements is spurious. For example, the judges may all agree that a subtle aroma is what makes for an excellent cheese, and that the Emmental is the outright winner; but perhaps most cheese-eating members of the public make their judgement more on appearance, price or shelf-life. This potential mismatch is reflected in the *validity* of the judgment: a judgement is valid to the extent that the judges' views accord with generally-accepted external opinions or judgements. Of course, in many situations the basis for validity will be hard to establish, and in some situations no measure of validity is possible.

The EASA evaluation process: initial rounds

Since 1994, the evaluation of entries at EASA competitions has followed a similar pattern, although for each successive competition the evaluation procedure has been refined. An initial call for submissions results in entries submitted to the organising body (one of the member countries of EKMA, the European Knowledge Media Association) through a standard form or template, together with at least example screenshots of the software or materials. Each submission is considered in a preliminary round with the purpose of weeding out inappropriate or incomplete submissions. These judgements are made by the organising team, if necessary seeking additional information from the author. Criteria include innovation (new software or novel use of existing IT facilities), target audience (use within the tertiary sector for education or research), country of origin (the work is conducted within a European state) and completeness (all mandatory sections of the form must be completed).

Following this preliminary round, authors are requested to provide more detailed information, including a full version of the software or materials. The second round of judging is organisationally the most complex. Discipline coordinators are appointed to take charge of judging submissions within broad discipline areas, such as arts and humanities, biology, economics or social science. Each discipline coordinator appoints disci-

pline specialists as evaluators, drawn from several European countries, and including both academics and students. Generally speaking, each entry is judged by three evaluators, one of whom is a student, and who are from at least two member countries of EKMA. Evaluators make use of an on-line evaluation form which encourages feedback for authors as well as judgements on a range of criteria. While the specific wording of the form has been refined from year to year, the general nature of the evaluation has remained similar, with evaluation based around five general criteria. Table 1 summarises the evaluation criteria used in the 1998 competition: similar criteria were used in more recent competitions. These five criteria (and minor changes to them) have been agreed with the EKMA Committee, the body with overall responsibility for the EASA competition. Each criterion is elaborated in terms of a number of aspects — and the evaluation form includes short descriptions of each aspect; for example the description for the *Added value* aspect of *Innovation* is ‘it enables activities which are impossible or impractical to carry out by other means (such as with books or conventional teaching)’. Evaluators are encouraged to rate each entry on each aspect prior to reaching an overall rating for each criterion. Finally, the evaluator gives an overall rating for the entry, a recommendation on whether the entry should proceed to the finals and provides comments both for the discipline coordinator (to help decision-making on whether the entry proceeds to the finals) and for the author.

An important feature of the process is that, while the evaluators cannot themselves choose or alter the evaluation criteria, they can specify how important they consider each criterion to be when reaching an overall judgement about an entry. To take a simple example, in judging our fictitious cheese competition, an evaluator may consider that taste is more important than smell, and the ratings on taste should be given more weighting when the overall judgement is made. For EASA, perhaps one evaluator may consider that, for the entries he or she has examined, *European portability* should be given more weight than *Innovation*; another evaluator might consider *Educational materials and approach* to be the most important criterion. Accordingly, after evaluating all of the entries assigned to them, each evaluator completes a *criterion priority form* on which he or she specifies the importance of each of the five evaluation criteria (in different competitions, either a three-point or a four-point scale has been used). Various methods can be used for combining the ratings into a single score to take account of these weightings; these are discussed in more detail below.

The task of the discipline coordinator, in conjunction with the team of evaluators within the discipline, is to decide which entries should proceed to the finals of the EASA competition. The numbers of entries from each

Table 1: Summary of criteria used in Round 2 evaluations

Criterion	Short definition	Key aspects
Innovation	Is the project novel in approach or in terms of the activities it supports?	<ul style="list-style-type: none"> • Added value • Distinctiveness • Effectiveness • General use of technology
Design, and ease of use	Is the product or approach well-designed and easy to use or apply?	<ul style="list-style-type: none"> • Installation or access • User interface • Support • Screen design • Transferability
European portability	Can the software or approach be used (or adapted for use) across Europe?	<ul style="list-style-type: none"> • Language for use • Language for support • Language adaptability • Portability of materials • Portability of approach
Educational materials and approach	Are the materials and the approach educationally sound?	<ul style="list-style-type: none"> • Users and objectives • User needs • Pedagogical approach
Evaluation of use	Has the software or approach been evaluated, and how good is the evaluation?	<ul style="list-style-type: none"> • Thorough evaluation procedure • Results of evaluation

discipline area allocated for the finals is determined in proportion to the total numbers of entries submitted within each discipline. To reach a decision, the discipline coordinator has available the comments and ratings (and weightings) provided by each evaluator; in addition, it has been common practice for the discipline coordinator to convene an electronic meeting or discussion to assist in reaching a final decision.

The EASA Finals

The second round evaluations result in a defined number of entries going forward to the EASA Finals; in different years, the number of finalists has var-

ied between 30 and 35 entries. The Finals event itself has become a major gathering of — and a celebration for — experts in the use of IT in higher education and research. Many of the entries are represented by two or three people rather than a single author, and at least 20 finalist jurors attend as well as local organisers, members of the EKMA Committee and other interested people. In addition, the EASA Finals have usually been linked to a national or international conference, and so the Finals provide a showcase for high quality academic software to a wide audience.

The judging process at the Finals (normally resulting in 10 EASA awards) differs in a number of important respects from the earlier round of evaluation. The first of these concerns *disciplinarity*. In contrast to the previous round, the entries to be compared are drawn from different discipline areas, and the judges (or jurors, as they have come to be termed) are drawn from a broad range of discipline areas. Teaching and learning in contrasting discipline areas may involve very different assumptions and methods, so the basis for judgement has to be broader than when comparisons are made within a single discipline; indeed these wide differences may raise questions of whether comparisons can validly be drawn at all. The jurors are chosen to have some expertise in educational technology or pedagogy as well as in their own discipline areas, and so the fact that a historian, for example, may be involved in the evaluation of an entry for teaching physics (and *vice versa*), can be seen as a potential strength in diversity as well as a potential weakness in lack of discipline knowledge.

This potential weakness (a lack of specific discipline knowledge or understanding by some jurors) is, we hope, ameliorated by a second aspect of the Finals judging, the use of *team working*. The jurors work in small teams rather than alone; for the last three EASA Finals, jurors have worked in teams of at least four, with at least one student juror in each team. Working in teams guards against the worry that an individual juror may have very little knowledge of the topic of a given entry. The organisers do their best to balance the discipline knowledge within each of the juror teams so that major areas are covered. (In addition, if an entry has reached the Final after undergoing scrutiny by a number of discipline experts in Round 2, it can be assumed that the content information is largely accurate!) Each entry is evaluated by two separate teams independently.

The third key aspect of the Finals judging is the emphasis placed on *discussion and negotiation* in reaching judgements. Each team spends 20 to 30 minutes hearing about, and asking questions about, each entry. Individual jurors have copies of the evaluation forms so that they can note down their individual judgements and informal notes. However the team has to reach an agreement of the evaluation ratings on each criterion, and this generally

requires a good deal of discussion. A further level of discussion comes in the final juror meeting, where all jurors are present. If the two teams which have evaluated the same entry differ significantly in their ratings, then the teams are asked to discuss the differences and to attempt to reach an agreed position. This is a semi-public debate in the presence of all the jurors and members of the EKMA Committee, and so justifications need to be clearly presented and well-argued.

Entries are judged against the same five general criteria as are used in Round 2, and this set of criteria is agreed with the EKMA Committee. However, jurors are given some latitude in interpreting the criteria, and, as in Round 2, the jurors determine the weight given to each criterion. One of the reasons that members of the EKMA Committee are invited to attend the final juror meeting (see below) is so that comments concerning the criteria can be fed back to the Committee for further consideration, and perhaps modification for the next competition.

The Finals themselves take place over three days. The authors and jurors arrive on the first day, when the initial juror meeting and author presentations take place. The main evaluation activities completely occupy day 2. The final juror meeting and the award ceremony take place during day 3, after which the participants leave, or perhaps take part in an associated conference or other follow-on events. A brief outline of the stages in the judging process at the Finals is given below.

Juror briefing meeting. At this meeting, the detailed judging process is explained to the jurors, team membership is finalised and any queries answered. Jurors are also provided with any supportive information which authors may have submitted along with their entry.

Author presentations. A representative of each entry gives a short presentation about their product to the other authors and to the jurors. The main purpose of this session is for authors to hear about each others' entries, but the session also allows jurors to gain an overview of the entries as well as a brief impression of the entries they will not be evaluating in more detail on the following day.

Evaluation sessions with each juror team. Each entry occupies a separate booth, with space for a poster as well as for necessary computer equipment. Each entry is evaluated by two juror teams at different times during the day. The author is invited to make a short presentation to the juror team and then answer any questions the jurors may have. Authors are informed of the evaluation criteria in advance. Within the limited time available, the jurors are encouraged to seek as much information as they need to make their judgements. Whilst the 'official' language for the Finals is English, often the author and one of the jurors will share a different first language, and flexible and sen-

sible use of language is encouraged, with appropriate translation by members of the juror team, in order to facilitate the most effective exchange of information.

Juror teams agree ratings. Each team evaluates about 12 entries (this has varied depending on the number of finalists and jurors: for example, at the 2002 finals, five teams of jurors evaluated 30 entries overall, with each entry evaluated twice — so 60 evaluations divided between five teams meant 12 evaluations for each team). The main task of the juror teams is to agree a set of ratings on the five criteria for each evaluation, together with some brief illuminative comments. Teams have time in coffee breaks, over lunch, and during the evening of the evaluation day to reach agreement on every entry they have considered — in the competitions to date, this has always been achieved, though at times resulting in considerable discussion and some heat!

Individual jurors complete criterion priority forms. Once the teams have completed their agreed evaluations, each juror (this time as individuals) completes a criterion weighting form on which they specify how important they consider each criterion to be, judged over the set of evaluations they have made.

Collation of ratings. The Chair of the Jurors gathers together and tabulates all the sets of ratings, calculates various rankings and measures of agreement in preparation for the final juror meeting. These are combined into a short report which also includes comments made by the teams on their evaluations. Further details on these calculations are given below.

Final juror meeting. All the jurors convene for a final meeting, together with observers from the EKMA Committee. The task of the jurors is to assign a number of EASA awards (usually ten) together with any special awards associated with the particular competition (in recent years this has included a special student award, an award for innovation and an award for particular European focus). Decisions are made on the basis of the information provided in the report from the Chair of the Jurors. First of all, however, any disagreements between teams who have rated the same entry are resolved (each entry is evaluated independently by two teams); this is conducted as a debate between the two teams, and differences have virtually always been resolved through discussion without the need for a formal vote. The Chair's report provides two different rankings of the entries (based on two different methods for combining ratings and weightings — see below); this means that there is unlikely to be a single numerical solution for identifying the 'top ten' entries. The strategy of providing alternative solutions has the intention of stimulating discussion and emphasising the point that qualitative infor-

mation, along with the numerical ratings, must play its part in informing the final decision.

Award ceremony. The ceremony in which the awards are finally handed out has proved to be something of a creative opportunity for the organisers. EASA Finals have included award ceremonies aboard a large lake steamer, a ceremony interspersed with music from a local band, and, for the last two competitions, speeches from the respective national ministers of education (who also handed out the awards). The closing EASA ceremony is often combined with the opening event of a larger conference, thus providing a much-deserved audience for the hard-working authors and jurors.

How the ratings are combined

Each team provides a set of ratings (scores of 1 to 4 on each of five criteria) for each entry they have evaluated. In addition, every juror provides a set of ‘weightings’ (also scores between 1 and 4) for the five criteria, indicating the relative importance of each criterion. These two sets of scores are combined in two different ways, as follows.

1. The mean weighting scores across all jurors are calculated. (Figure 1 shows the mean weightings provided by jurors for the five criteria for the competitions in 1998, 2000 and 2002).
2. Adjusted ratings are calculated according to the *geometric method*. Every rating score (1 to 4) for each criterion is multiplied by the weight associated with that criterion. These scores are then summed across the five criteria to give a composite weighted rating (or geometric rating) for each of the two team evaluations carried out on each entry — in other words the evaluation from each team results in a single score, reflecting how well the entry was judged by the team taking into account the relative importance of each criterion.
3. Adjusted ratings are also calculated according to the *truncation method*. With this method, the rating scores are adjusted by setting an upper limit on the rating, depending on the average weighting of each criterion. A ‘truncation level’ is set for each criterion according to its weighting, as shown in Table 2. (The weighting range is divided into four quartiles and the truncation level set depending within which quartile the weighting fell.) All the raw ratings on each of the criteria are then adjusted so that no rating exceeds the truncation level for its criterion. For example, in 2002 the truncation level for the criterion *European Portability* was 2. Therefore any ratings of 3 or 4 given on this criterion were reduced to 2. Finally, the adjusted ratings for each team evaluation of an entry are summed,

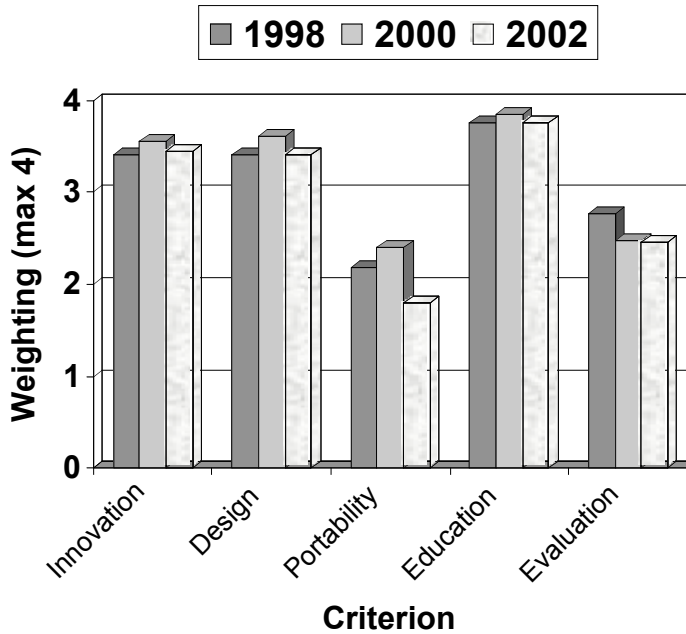


Figure 1: Mean weightings for each criterion for the EASA Finals in 1998, 2000 and 2002

again giving a single score, providing a slightly different measure of how well the entry was judged.

The difference between these two rating methods, the geometric method and the truncation method, can be explained most easily by reference to our fictitious cheese-judging competition. Suppose that different cheeses are rated on the basis of two criteria, taste and smell. Consider two possible situations. In the first, the jurors consider that taste is more important

Table 2: Allocation of rating truncation levels based on the mean criterion weighting. For example, if the mean rating for criterion 'X' is 2.8, then a truncation level of 3 is set for criterion 'X'

Mean criterion weighting	1.00–1.74	1.75–2.49	2.50–3.24	3.25–4.00
Rating truncation level	1	2	3	4

than smell, but both dimensions (taste and smell) matter for their full range — that is, both taste and smell contribute to the overall quality whether the cheese is a poor one or an excellent one. This situation is equivalent to our geometric method for combining ratings and criterion weights. A criterion with a low weighting will contribute less to the overall score, but will contribute for its full range.

Imagine a second situation. Here the jurors might also consider taste and smell to be important, but that smell is only important when the smell is unpleasant — an otherwise good cheese is spoilt by its unpleasant smell. Provided the smell is not too bad, then taste is the only dimension that really matters. This situation is modelled by the truncation method: a criterion with a low weighting only contributes if the rating is low; if the rating is higher, there is no additional gain to the overall score.

There has been some debate amongst EASA jurors as to which of these two methods is more appropriate for combining the ratings. One view that is expressed is that the dimensions are essentially independent (they don't interact in the way that taste and smell do), and so the geometric method should be the better. Others have argued that, with the lowest weighted criterion (European portability), the truncation method appears to be sensible: entries should be 'marked down' if they score very badly on portability, but provided the rating for European portability is above a certain minimum acceptable level, then additional improvements in portability shouldn't add anything to the overall score. The main point, however, is that the two rating methods result in similar but slightly different rankings (for example the correlation between the rating methods for 30 finalist entries in the 2000 competition was +0.96). When discussing whether entries will receive awards (and particularly for those which are close the borderline of the top ten), the differences in rankings stimulate discussion and an appreciation that no numerical method for combining ratings will be perfect — each entry needs to be considered in terms of its broader strengths and weaknesses.

Are the judgements at the finals accountable, reliable or valid?

We can now consider whether the judging at the last three EASA Finals provides evidence for each of the criteria we introduced at the start of this chapter: accountability, reliability and validity.

Accountability

A judging process is accountable if the processes by which the judgement is made are clear, explicit to all relevant concerned groups, and the processes are open to appropriate discussion and refinement.

Over the years, successive organisers have expended considerable effort in trying to make the process as clearly defined and explicit as possible — at least for the EKMA committee, the organisers and the jurors. The processes for completing the forms have been successively refined, and the information provided for jurors has become more and more comprehensive. The responsibilities of different groups and individuals are also explicit. However this clarity and explicitness may not always reach as far as the competitors themselves. In most years (but not all), the authors have been provided with information about the evaluation criteria, and rather brief information about the judging process. In conversations with authors at the Finals, I have been surprised at how little some competitors have known about the process which they themselves are going through. This suggests that more could be done to inform the authors about the process in a systematic and thorough fashion, and this might well result in an even more successful event.

Turning to the *refinement* dimension of accountability, the evidence here is strong. Since the first EASA competition in 1994, there has been a good flow of information from one competition to the next, with considerable improvements in both the organisation and the evaluation processes over the years. The focus on discussion and negotiation which characterises the Finals inevitably means that the whole process comes under close scrutiny. Some jurors are finalists from previous competitions, and are concerned that the processes are fair and rigorous. The presence of the EKMA Committee at the Finals, and particularly at the final juror meeting, means that there is open discussion amongst the jurors, organisers and committee members, and in some respects this occurs, outside the judging process, with the authors too, with suggestions and ideas flowing freely throughout the three days.

On balance, it would appear that the processes of EASA can claim to be reasonably accountable, although this would be improved by the provision of additional information to the competitors about the evaluation process at the Finals. It would be interesting to investigate how accountable other competitions are — such as international ice skating, music competitions or beauty contests, where a relatively small number of judges reach decisions in ways which, from the outside, often appear not to be particularly explicit.

Reliability

Reliability is indicated by how well the jurors agree about their assessments. Here we can look at some hard evidence: in the Finals, two completely independent teams scrutinise each entry. How well do they agree? Some relevant findings are shown in Figure 2. The two teams evaluating each entry each produce a set of ratings across the five criteria; we can correlate these two sets of ratings. This is a somewhat crude measure, and in some cases no correlation can be computed (when one or both of the teams assigns the same rating value on all five criteria). We categorised each of the correlations as positive (indicating a level of agreement), zero (no agreement) or negative (indicating disagreement). Figure 2 plots the proportion of correlations which are negative, zero and positive.

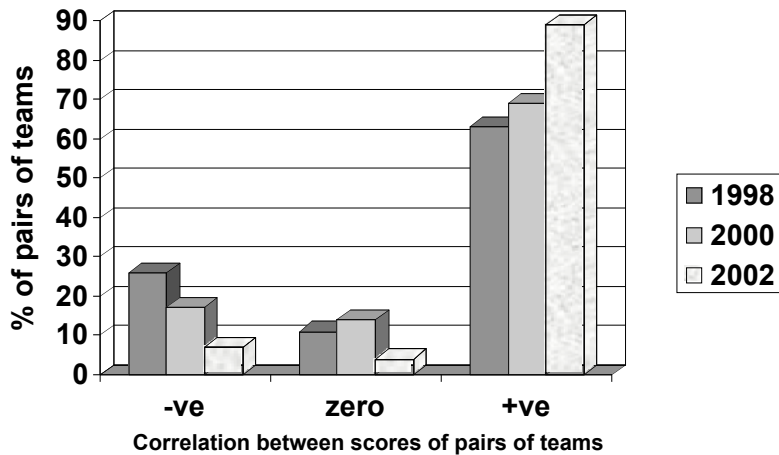


Figure 2: Proportions of negative, zero and positive correlations between pairs of teams rating the same entry. Data are plotted separately for the EASA Finals in 1998, 2000 and 2002

The results are encouraging from two points of view. First of all, the great majority of the correlations are positive, indicating good agreement between the evaluations of the pairs of teams on average. Second, the proportion of positive correlations, and so of agreement, has increased over the three competitions, with nearly 90% of the correlations positive in the 2002 competition.

These data refer to the ratings provided by each team, not to the decisions concerning the awards. We would expect even greater reliability for decisions on the awards, since these are substantially based on the team ratings but also include considerable discussion and debate over disagreements and borderline cases. The large number of jurors involved in the decision-making process is also likely to increase the reliability of judgements.

Again, it is interesting to speculate on how EASA might line up in terms of reliability against competitions where a relatively small number of experts reach a decision, such as in a music or arts competition, or some sporting events. I would suspect that the rather lengthy and cumbersome EASA process does have advantages in terms of reliability.

Validity

A judgement is valid to the extent that the judges' views accord with generally-accepted external opinions or judgements. However this just begs the question of what external considerations we should use.

A number of forms of validity are distinguished by psychologists. These include the following.

Face validity. This refers to the extent to which the evaluation appears to be relevant to its stated purpose. Does the evaluation 'look like' an appropriate measure? The problem with face validity is that it is purely concerned with appearance, and so is only as meaningful as the impressions of the target group. Although we have no measure of face validity for the evaluations at the EASA Finals, we can assume a reasonable level as otherwise there would be a higher level of complaints from the competitors (complaints have been extremely rare). The selection of expert jurors from across Europe is also likely to add to the face validity.

Content validity. Content validity refers to situations where the content of a test or evaluation can be compared directly to the real situation which is being evaluated. For high content validity, the evaluation should share the same sorts of content as the real situation. This is certainly the case for EASA in terms of the materials evaluated — a working version of the software together with an overview and context provided by the authors. However, an evaluation of the software in real use by its intended users (for example use by teachers and students for real learning) would have rather higher content validity. Such a solution is not, however, practical. No strong claims either way can be made in terms of content validity, although the thoroughness of the EASA evaluations does perhaps result in as good a form of content validity as could be reasonably expected.

Predictive validity. This form of validity comes from the ability of an evaluation to predict an outcome or event in the future. For example, do the award winning entries from the Finals prove to be more successful products than the non-award winners? Alas, we have no information to test the predictive validity of EASA evaluations. Perhaps follow-up studies will be considered in the future to explore this question. Even then, of course, success might result from the fact that an award was given rather than through the intrinsic quality of the entry.

Construct validity. This form of validity derives from the correlation between the evaluation itself and some other evaluation or measure that can be conducted. Suppose many of the EASA entries also took part in a different competition — would the results be similar? We have no answer to this question.

In conclusion, we have little evidence concerning the validity of the EASA evaluations. They probably have moderate face validity, and some degree of content validity. Studies in the future might consider investigating possible predictive validity and construct validity. The problem is that these are hard — though not impossible — to measure. Again, we might speculate about other forms of competition. Competitions involving an expert panel of judges are likely to have some degree of validity since judges are chosen on the basis of their accepted expertise. Competitions involving judgements by large groups of the population (Big Brother, Pop Idol, and the like) are probably reliable (since there are so many judges, even if agreement between judges is fairly low) but will often do badly on validity since evaluation criteria are implicit and variable.

Conclusions

We started this chapter with a question. Is judging academic software like comparing chalk and cheese? The answer, although not completely clear cut, is that it is not: the evidence does suggest that reliable comparisons between entries in the EASA competition can be made, and that the reliability of the comparisons has increased over the last three competitions. The writer E. M. Forster famously pronounced two cheers (out of three) for democracy — we can perhaps allow ourselves one and a half cheers for EASA. The evaluations appear to be reliable, the processes are at least partially accountable, but there is little evidence in either direction concerning the validity of the judgements.

Finding finalists: from individual evaluations to collective decisions

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Discipline and national groupings

THE nature of education, and especially higher education, is such that each practitioner (lecturer, educationalist, educational software developer) is perpetually operating in two overlapping but often quite discrete worlds — their discipline world and their national context. The discipline world is often the simpler to appreciate, since academics — be they tutors, researchers or students — often identify themselves by their discipline. ‘I am a historian’; ‘I am a physicist’; ‘I teach orthodontics (or pharmacology, or musicology, or mediaeval studies)’ are all statements by which individual academics identify themselves and their work. The national context is simultaneously more obvious and more complex, since it usually defines not only the language in which a scholar works, but also the educational approaches and methods that provide a framework into which they will build the teaching materials they design. As is discussed elsewhere in this book, the differences of pedagogic approach and expectations between the countries participating in EASA provide ongoing challenges and inspiration to the participants. Indeed, the diversity of educational ideals and methods current within Europe provides much of the basis for the competition’s continuing development.

For the participants, however, these two overlapping worlds add a layer of complexity which can frustrate both the ideal and the process of the competition. Each entrant in the competition rightly expects the submission procedure to work with them in their own language, and for the evaluation process to work in the language (or multiple languages) used in their entry. At the same time, they equally rightly expect the evaluations to be carried out by experts in their educational specialism, and by people who are them-

selves educators or students in their discipline. This dual expectation could put great pressure on the national organisers, if they were to be expected to appoint jurors, or at least to find a way of selecting jurors, for submissions in many disciplines. From the outset, therefore, this issue was addressed by appointing Discipline Coordinators from within the participating countries. The disadvantage of the extra layer of administration that this involved was easily outweighed by the benefits of having people whose responsibility it was to find appropriate specialist jurors for each entry, to support them through the process, and then to collate the evaluations in order to recommend those entries that should go forward to the finals.

Discipline Coordinators

One useful attribute of a Discipline Coordinator is to have wide access across Europe to discipline colleagues with computer aided learning (CAL) or e-learning experience. It is therefore not surprising that many Discipline Coordinators have had previous experience of EASA, as national coordinators, jurors or competitors. In the UK, Discipline Coordinators have been drawn from nationally funded, discipline-based, teaching and learning technology support projects such as the Computers in Teaching Initiative and the Learning and Teaching Support Network. Individual Discipline Coordinators work in different ways, depending on the nature of their discipline, but the overall system is designed to ensure that a similar process, working to similar guidelines, is applied across all subjects. This chapter outlines how that process operates.

The Discipline Coordinator's work falls into a series of tasks: finding and selecting jurors; providing them with guidelines and, later, with support; matching submissions to jurors; collating individual jurors' evaluations and recommendations into an overall view of each entry; and recommending finalists. With the exception of finding jurors and drafting juroring guidelines, these tasks must be fitted into the period between the end of the formal submission process (by which time, three copies of any CD-ROM and paper-based materials should have been sent to the Discipline Coordinator by the National Coordinators) and the date for announcing the finalists (usually several weeks before the date of the Finals). In the most usual EASA scheduling, this causes the majority of the juroring process to fall in the late spring and summer months when lecturer jurors may be free of some of their normal teaching duties, and student jurors may have time between exams and the end of the academic year.

Finding and selecting jurors

The EASA competition could not happen without the participation of university staff and students prepared to spend time carefully working through electronic tutorials, courseware, computer-based research tools and aids to learning, and evaluating their usefulness and appeal against a set of standard criteria. These Stage 2 jurors may assess several entries, possibly without much opportunity to share their opinions with others, and with no reward other than the knowledge gained by undertaking the task. How are such people found? Perhaps surprisingly, and fortunately for EASA, there are large numbers of people willing to do this, and feedback from them would suggest that they do find the work to be its own reward. This may not be as strange as it appears. How often does a lecturer or a student have the opportunity to see the very latest in educational software in their discipline — materials that have been produced by their peers, and not been through the mill of commercial publishing? How often does anyone have the opportunity to examine in detail the way someone else teaches a specialist subject? Whatever the answer to these questions, a call for jurors always seems to produce a team of interested volunteers, most of whom go on to work for many hours to provide evaluations of entries. Some jurors find the experience sufficiently rewarding to volunteer for the work again in subsequent years.

All that said, for each competition a suitable group of jurors must first be found. The normal process is for the Discipline Coordinator to put out a call for jurors, using discipline-based email discussion lists, bulletin boards, and newsletters. Personal contacts are often invaluable and recipients of the call frequently pass the information on to colleagues who may be interested. From this call, and by contacting jurors from previous competitions, a pool of potential jurors can be assembled, along with a database listing their nationality, the languages in which they are happy to work, their status (as student or lecturer) and their specialist subject expertise. This last characteristic is, of course, crucial, as it is at this stage in the juroring process that the subject content of the entries will be assessed, as well as the educational appropriateness of its presentation.

Within the EASA structure and organisation, the process of selecting jurors has never formally been carried over from one competition to the next. This is natural, given the way in which the organisation of each competition is the sole responsibility of that year's hosts, and the way in which the Discipline Coordinator post may (and indeed should) move from one partner country to another. It is perhaps regrettable, however, that no formal database of EASA jurors has been maintained, as Discipline Coordinators may find themselves starting afresh each year. Whilst new perspectives

are essential, it would also be good for both the competition and the participants if there were jurors whose involvement with the competition could be maintained and developed. It has been suggested on several occasions, and was debated at the NetLearning Conference in Sweden which hosted the 2002 competition, that EASA might grow into (or spawn) a European agency for the evaluation and accreditation of e-learning materials. If this were to come about, then a core panel of experienced jurors would be a valuable starting point for such a venture.

Providing juror guidelines

In an ideal world, one specification of a product or process would serve everyone involved in its delivery, but in reality it is usual to find that the people involved at each stage need their own guidelines for interpreting the specifications. This is as true for the evaluation of educational software as it is for the production of material goods. The irony in the case of EASA is that it is the evaluation criteria (detailed elsewhere in this book) which are published from the outset, and to which submitters of software will try to match their entry. In these circumstances one might expect the jurors to need less help than the entrants, but it is usual for Discipline Coordinators to find that they need to provide guidance for jurors. This may be as simple as a checklist of actions, or more comprehensive, such as a ‘frequently asked questions’ resource for when problems arise (‘It won’t run on my computer’; ‘The text is bi-lingual but the video is in a language I don’t speak’; ‘It’s in the wrong discipline category’; ‘I’ve just discovered I need to go to a tropical beach resort with no electricity for 6 weeks — shall I take it with me?’ etc). Even with guidelines in place it is normal for discipline coordinators to be on hand to answer questions from jurors, especially when jurors are inexperienced or not working in their native language (and when non-English jurors kindly accommodate the needs of English-speaking coordinators). It is one of the wonders of human languages that in most years someone will interpret a guideline, or even a fundamental evaluation criterion, in a new and unexpected way! If this is not going to cause chaos later in the juroring process, such interpretations need to be understood, and judgements may need to be revised, or at least re-visited, before the evaluation can be fitted into the overall system.

Matching submissions to jurors

Once all the submissions are received they must be despatched to appropriate jurors. Ideally, every entry will be evaluated by at least three jurors with the following characteristics:

1. at least one lecturer/tutor
2. at least one student
3. at least one discipline specialist, and all with suitable discipline experience
4. at least one fluent, and all competent, in the language of the submission
5. at least one not from the country of origin of the entry

This entirely sensible list of juror attributes inevitably needs to be relaxed on occasions. The need for at least one subject expert is immutable, as is the need for the necessary language skills. Once these are fulfilled, however, the other criteria may have to be met on a 'best we can do' basis — because, even with a large juror pool, it can be hard to find, for instance, non-Danish experts in Danish social history, or non-Swedish speakers of the Swedish language. As the European Union grows and EASA broadens its reach, the issue of language may become crucial. Language issues within EASA are discussed elsewhere [see chapter 8].

Whilst it is a clear requirement that each entry must be evaluated by more than one juror, it may be less obvious that each juror should evaluate more than one entry. The task of assessing the extent to which a teaching resource meets a set of apparently fixed criteria should be possible in isolation, but in practice it is much easier to see both the strengths and the weaknesses of a learning aid or tutorial if there are other similar materials being evaluated alongside it. In addition, the very act of carrying out and documenting the evaluation of several entries creates a kind of moderating process, without any overt need for comparison. At its crudest level, a juror may upgrade or downgrade their assessment of several entries of a quite similar standard if they also examine an entry which is significantly better, or significantly weaker, than the norm. Jurors often volunteer a recommendation on whether an entry is or is not suitable material for a finals award, and this is very helpful to the coordinators.

With a mind to the final selection process, many Discipline Coordinators also ask their jurors to perform one additional task after they have awarded absolute gradings to each entry — and that is to rank or order the entries that they have evaluated. This can perform two functions. Firstly it permits a slightly finer level of discrimination between entries which have received almost identical overall grades on the stated criteria (since a 1–4 scale can

accommodate some significant variation within any one grade point). Secondly, it provides the Discipline Coordinator with valuable additional advice when the final selections are to be made, as the ranking information from several jurors may clarify points of detail from a wider perspective than that of any single evaluation.

Collating individual jurors' evaluations and recommendations

Once all the jurors have returned their evaluations, the Discipline Coordinator has the task of combining the evaluations for each entry into a meaningful overall assessment of its quality and appropriateness, and collating the individual jurors' comments into a coherent form that can be sent to the entry's author as constructive and encouraging feedback. Feedback to entrants is discussed later in this chapter.

The collation process may be straightforward if all the jurors have awarded similar grades to an entry. It is common to find that jurors generally agree to within one or two grade points — and such agreement in itself validates the juroring process. It also highlights those instances where jurors disagree radically on an assessment. In this situation, the Discipline Coordinator may then need to examine the jurors' interpretation of the criteria and their reasons for the gradings they have awarded. It is at this stage that the jurors' comments are crucial to the evaluation process as well as to the feedback to the competitor. The Discipline Coordinator may also consider the differing evaluations in relation to the entry itself — though they usually refrain from acting as additional jurors or from applying a 'casting vote'. In practice, it is usual for jurors' opinions to match well at the point where they recommend that an entry should or should not go on to the final round.

Recommending an appropriate quota of finalists

Once a collective evaluation has been achieved for each entry, the Discipline Coordinator has the task of deciding which entries should be recommended to go forward to the final round of the competition. On some occasions this may be straightforward if, for instance, only a very few entries have been deemed to be of the highest quality. If several entries are outstanding, though, the decision-making is much more complex. Indeed, reaching an overall recommendation on finalists can be a nerve-racking process, particularly in a discipline grouping which is quite broad in its reach, such as the

‘arts and humanities’ group. The comparison of the quality of widely differing types of entry, and in widely different subjects, is discussed in detail by Nick Hammond in Chapter 6 in this book.

The tension of the finals selection process is increased by the quota system used in the EASA competition, whereby each discipline area is allocated a number of places at the finals, determined by the number of entries in that discipline area. There is a simple logic to this method, designed to ensure that entries in ‘prolific’ discipline areas such as engineering and medicine do not suffer from greater competition due to the large number of entries in their field. This rationale would work effectively if the quality, and the distribution of quality, were consistent across all disciplines. Whether this is actually the case is subject to some dispute: some disciplines, such as the sciences and engineering, sensibly foster a culture of frequent publishing of papers in research journals as a way of testing theories and of getting new knowledge into the public domain (or at least into the marketplace) early enough for it to be useful or profitable. Other disciplines, and humanities subjects in particular, have a culture of scholarship and research based on long reflection culminating in a monograph publication, tested previously against peer opinion in the sub-discipline.

It is arguable that the ‘publish early’ mode of work will produce a larger number of overall entries in competitions such as EASA, as these academics are more used to submitting their ideas for public scrutiny, more used to producing finished products in a short timeframe, and more used to the competitive nature of research paper publication. Humanities academics may produce fewer works (which would tally with the lower submission rates to EASA in these disciplines) but these might be of a higher average quality — in that a self-moderated or peer-moderated pre-selection process has effectively already been undertaken. In these circumstances, applying quotas to the EASA finals could discriminate against ‘less prolific’ disciplines. The low numbers of these entries reaching the finals could then discourage teachers in those disciplines from submitting their work to future competitions, thereby completing a vicious circle which would stifle the development of creative e-learning materials in non-science disciplines.

The EASA organisers are sensitive to these problems and the quota system is flexible in some respects. At the final selection stage it is not unknown for an entry to go forward in a different category from that in which it was submitted, or even in a newly identified category, if it is radically different from all other entries. Additionally, if jurors in one discipline have identified few entries of sufficiently high quality to go forward in their discipline group, the Discipline Coordinators of other groups will be offered the opportunity

to submit more. Although the decision making is hard, it is rare for a Discipline Coordinator to feel that the entries in their area have not been fairly represented at the finals.

Feedback

Entrants who are invited to the Finals are notified of their success by the EASA organisers, so the Discipline Coordinator's last formal task is to write to those competitors whose entries have not gone forward, and to provide them with an explanation and as much helpful feedback as possible. It is a fundamental principle of EASA that everyone involved should gain from the experience, and unsuccessful entrants must be offered encouragement and guidance in order to acknowledge the huge investment of time and energy that they put into their submission to the competition. The comments from individual jurors are separated into those which may be passed on to the competitors and those which are confidential to the Discipline Coordinator. With some care, the detail of the 'open' comments, and the essence of the confidential ones can be drawn together into something which gives the authors both an assessment of their work and an indication of why it was not selected for the final awards round.

As was mentioned earlier, Stage 2 discipline jurors devote time and expertise to evaluating their allocated entries, and for this they receive no formal reward other than the interest and knowledge gained from working through the educational materials and the evaluation process (and the possibility that they may be invited to be jurors at the finals). In the process of carrying out the evaluations, however, they often develop an interest in the competition as a whole, a particular interest in the items that they have evaluated and, sometimes, a certain championing spirit for their own particular favourite. The Discipline Coordinator's real last task, therefore, is to keep the jurors informed about the decisions that their work has made possible, notifying them of the entries chosen for the finals, providing feedback on how that decision was made — especially where an individual juror's recommendations have not been corroborated by the rest of the juroring process — and mailing out the finals results to discipline jurors in advance of the press announcements. When the EASA Awards are finally made and announced, it can be very rewarding for a juror to know that the entry they evaluated, and recommended for the final, has been given the public acknowledgement they knew it deserved.

Questionnaire results: from the competitors' point of view

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IN May 2002, Rachel Panckhurst and one of her graduate students (Virginie Vedel) from the University of Montpellier 3, France, in collaboration with the EKMA board and the EASA organisers, designed an anonymous questionnaire concerning the European Academic Software Award (EASA). This questionnaire, which aimed at improving the evaluation procedure for EASA, due to answers given by competitors, was then activated on the University server and available for filling out during a three-week period. Of the 146 submissions/participants, 81 responses were received. At the EASA 2002 finals, a small 'open' questionnaire was also distributed, in order to check differing viewpoints from: organisers, jurors, competitors, discipline coordinators and EKMA board members.

In this short synthesis, rather than give detailed results for each of the 15 questions, we prefer to give an overall picture of some interesting features which emerged from the final compilation of the results. Firstly, we discuss the following themes:

- Language
- Communication
- Disciplines
- Advertising
- Reasons to compete

We then move on to the European nature of the EASA competition, which was an important feature mentioned in the questionnaire.

Language

Language has always been of special interest within the EASA competition; although competitors are recommended to fill out questionnaires and forms on the web-site in English, the software itself may be submitted in any European language, provided the organising team is capable of finding jurors who speak the given language. However, 11% of the competitors indicated in the questionnaire that they would have preferred to fill out the description of their software in a language other than English (French, German, Italian and Portuguese were suggestions), but some recognised that 'it is not feasible for the work of the jury'. Publicity materials are currently provided in English, French and German; 17.1% of the competitors thought that other languages should also be provided ('all the European official languages').

Even if English does become a 'standard' concerning the language in which people may tend to communicate in professional situations (in certain areas of the world at least), it would be interesting to estimate how feasible it would be to let competitors choose the European language they would really like to use, including both software description in stage 1 of the competition and for the presentations at the finals.

Advertising

Only 13.4% of participants made entries from a non-EKMA member country, which seems to indicate that advertising needs to be improved throughout the whole of Europe and not confined to EKMA participating countries (currently Austria, France, Germany, Netherlands, Sweden, Switzerland, United Kingdom). However, as indicated in our results (18% gave no answer), participants found out about the competition through 'friends and colleagues' much more (46%) than via 'web-sites' (21%) or 'flyers and posters' (15%) which indicates that advertising might be inferior to the 'word of mouth' system.

Communication

Concerning deadlines, information provided on the EASA web-site (www.easa-award.net) and electronic communication between the organisers and the competitors, the following points were made:

- the deadline of the call for submissions was sufficient (90.2%)
- 15.9% thought some information was missing about the competition on the web-site ('I would like to have seen more information about past win-

ners', 'How are the results of the competition disseminated?', 'What is the award's status?', etc.)

- 84.1% would have liked to have received an electronic mail confirmation after having completed and submitted the Web form (this point has been rectified for EASA 2004)

Disciplines

Another aspect which is interesting to pinpoint is the discipline area to which the software belongs. Since the evaluation of the second phase is carried out by discipline experts, it is important for both the jurors and the candidates that the entry be initially assigned to the correct discipline. An important percentage of the competitors found the classification problematic:

- 32.9% indicated that the discipline areas were not clearly identifiable for their submission; in some cases (25.6%) this was because the submission covered several disciplines, but also because some disciplines are felt to be missing ('computational linguistics', 'management', etc.) or to be too broad ('I think Electronic learning environments as a category is too broad', 'Art and Humanities is not a discipline. History, Modern Languages, Literature or Philosophy are disciplines. The categorisation is confused, mixing disciplines with faculties or schools.')

Reasons to compete

It was interesting to understand why participants had entered the competition; the options proposed (by the organisers of the questionnaire) were: 'no answer' (2%), 'good opportunities to show main features of the software' (61%), 'public acknowledgement of work' (27%), 'finding future help to maintain and improve the software' (5%), 'high profile opportunities to disseminate our/my work' (5%). Participants were able to indicate several answers (18.5% gave one answer; 23.4% gave two answers; 35.8% gave three answers, 19.7% gave four answers). 18 'other' answers were also given: 'competitions are a must in any academic pursuit', 'an opportunity to interact with others with similar interests and to share ideas', 'to get a good measure of the software', 'to improve my curriculum vitae', 'it may give some feedback', 'opportunity to find out what kind of educational software is being developed across the continent', 'good publicity and a kind of benchmark', 'being an EASA finalist is seen as prestigious in the academic field'.

European nature of the EASA competition

As its name suggests, the European Academic Software Award is a European competition; competitors do not have to belong to one of the EKMA representative countries, but they have to come from a European country.

Up until 1998, software submissions were accepted from non-European countries (see Chapter 4). Since then, EKMA has clearly reaffirmed the strict European rule. However, the fact that non European participants express interest in this competition is a significant sign of recognition concerning the quality of the contest. So it seemed interesting to ask all of the (European) participants what they thought about this, in particular in relation to a proposal made on the EKMA board, which was to provide a special non-competing category.

The idea of having a special 'non-competing' category for those outside Europe was accepted by some of the participants; others suggested making the competition global. Over and above the question of the special 'non-competing' category, the strictly European character of the contest provokes differing opinions.

1. On one hand, the idea that it is important to support this specific nature of the contest:

No, it is my feeling that only European submissions should be accepted. We have enough pressure from other markets and should stimulate European developments.

I think it should be strictly a European competition to maintain its character and focus.

Given that this is a European award, it is entirely reasonable to restrict entries to those who are in Europe or otherwise you will have hundreds of countries competing.

2. On the other hand, the possibility of finding out more about other projects, confronting different ideas, establishing interesting links and exchanges, with the underlying idea of increased recognition for the competition and the competitors:

The nationality of a competitor is only relevant in connection with his or her aims and cultural and economic background. There may be different attitudes towards the overall perspectives of academic software in Finland, Bhutan, Burkina Faso or Vanuatu. If mutual criteria of evaluation can be found — which should be quite sophisticated — it would be very interesting to see what competitors outside Europe have to offer.

I sincerely think the European Open is the way for Europe to face the future. Let the world come to Europe.

I agree that a special category can be created for software competitors outside Europe. It is possible that some other software developments outside Europe might be interesting and they may lead to cooperation towards better software development for educational purposes. This will benefit Europe and other countries as well.

Good idea, will generate more interest and publicity outside EU. Interesting to compare European educational projects with for example USA.

3. A third rather different proposal suggests that both (1) and (2) could be organised, or at least co-exist:

If it is the European Academic Software Award, only Europeans should compete. But I would like to see a World Academic Software Award.

Perhaps there could be a second competition.

The entries should be European only. Otherwise, why call it the European Academic Software Award. External entries should be allowed for demonstration purposes only.

It appears from these remarks that the debate on the question is far from being resolved. If the strictly European character were to become more flexible, it would first need to be given considerable thought.

Conclusion

After having analysed the questionnaire results, we had the pleasant impression of knowing the candidates a little more. Also, within the framework of a contest such as EASA it is interesting to collect candidates' opinions (suggestions, evaluations, etc.) in relation to a particular procedure.

Firstly, the answers to the questionnaire are globally positive. Any criticism was formulated in a constructive manner. Admittedly, this is partially due to (1) the question/answer method (free answers): indeed, one may think that the candidates who took the trouble to answer (more than 55%) felt positively disposed towards this type of contest; (2) the period during which the questionnaire was submitted, i.e. stage 2, before the selection for the finals had taken place.

At the same time, this type of questioning causes expectations: requesting competitors to suggest improvements, or judge (at least part of) a process, means it is important that the organisers react accordingly; otherwise candidates may feel they are wasting their time or have been misled. These few

pages and the elements that have been taken into account for the EASA 2004 contest constitute initial feedback to the competitors. From this viewpoint, it is important not to regard the answers as a precise, exhaustive evaluation of the contest, but as a series of proposals which one may reflect upon and which the EKMA board could develop.

This questionnaire has made it possible to identify both the positive and problematic elements concerning the following topics: 'Language', 'Advertising', 'Communication', 'Discipline', the 'European nature of the EASA competition'; the 'Reasons to compete' item seems to be situated at another level. A certain number of proposals can indeed be easily retained; however, others raise extremely complex points. This is particularly so in the case of the question concerning the discipline area of the software submission, which can be subdivided into at least two distinct problems: (1) identification of the disciplines (denomination, structuring); (2) 'categorisation' of the multi-field projects/entries. These problems were also apparent (as suggested by several jurors during the 2002 finals, Ronneby) given the answers to the open questionnaires: the entries can constitute projects of quite a different nature, for which various subdivisions can be proposed: Research/Teaching/Tools or Software/Environment. In addition, over the past 10 years, software applications have become very diverse and complex, and this point, *de facto*, questions both the disciplines themselves and the evaluation procedures used. Up until now, EASA has maintained one and only one evaluation procedure (for all entries) and this has been successful. We may now need to rethink this or broaden our horizons in some respects.

From the first to the second decade of EKMA: reflections and recommendations

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*From pioneer work to a solid resource for access
to knowledge and quality*

The achievements of EKMA's first decade

EKMA has had two missions, as have been described in this book:

1. to foster the creation of excellent educational resources using IT and modern media;
2. to formulate and disseminate recommendations on quality and good practice.

To maintain and sustain continuity, these missions have been undertaken by building a multidisciplinary network of educational software experts, designers and reviewers, which has grown year by year.

EASA — meeting the needs of a variety of target groups

The two missions have been addressed through the medium of the EASA competition. EASA has not only fostered, but also publicised, the qualities necessary for effective IT-dependent learning resources, which must fulfil a number of requirements for three interested groups: students, academics and educational organisations. In the bruising world of information resource overload, it is important for educational managers to have easy

access to materials which demonstrate quality and cost-effectiveness, especially in regard to the time that students spend working with the materials and the quality of their studies whilst using them. To be successful in supporting learning, technology for educational use should deliver applications that activate and stimulate learners — by increasing their access to knowledge resources, by supporting communication between learners and teachers, by providing high quality resources (multimedia, simulations, etc.), by being adjustable to their learning style and preferences, and by being integrated in the curriculum. EASA has always looked for a high degree of functionality in the software it has evaluated. It has identified important features which are of interest to European students and teaching staff. It has always engaged with all three interested groups, and so all have felt the benefits:

- Students** gain increasing access to quality resources
- Academics** receive stimulation and encouragement to develop new materials; gain recognition of their work; are able to share experience and knowledge
- Organisations** benefit from the cost effectiveness of accredited materials

In addition to the software which has been developed for and publicised by the EASA competition, the EASA process has itself developed a quality-assessment and evaluation system. Within EASA, an effort is made to evaluate the features and functionality by defining objective evaluation criteria. As with any evaluation in a competition, a certain level of subjectivity cannot be avoided, as perceived quality is always a mixture of aggregated interpretations of the criteria, coloured by the personal taste of the evaluators. However, the EKMA organisation strongly believes that it has achieved a high degree of agreement — a consensus — on the selection and evaluation processes, as described in this book.

The formal criteria for the contest have been quite rigid, though with minor adjustments being made each time, but expectations and interpretations have changed over the years. The ambition of EASA has, throughout, been to identify excellent software reflecting current trends and standards, thereby constituting a kind of ‘gold standard’ — although not expressed in terms of quantitative measurements but rather by qualitative assessment. However, as technology and software environments have developed, the quality of software-delivered learning materials has improved over time. The final ranking of reviewed submissions has always been relative, allowing the excellent ones to stand out. Theoretically, given the improvements in the entries, the scores awarded by the reviewers should have increased in each

year; in reality, though, the average scores have been quite stable over the decade, suggesting that as the quality has improved, so the definition of quality has followed it. Thus, the expectations regarding a piece of software in 2004 are not at all the same as they were in 1994 — but EASA winners will still reflect the ‘state of the art’.

In the next decade, we can anticipate further changes: technology will become ever more sophisticated and will enable easier ways to author software, often using templates and platforms which have already been created. The focus will then be increasingly on content, quality and functionality, supported by the technology. Currently, much e-learning development is associated with access to so-called learning objects — small, independent ‘nuggets’ of learning material — that can be assembled by a human tutor or a semi-automated process into more extensive learning materials or on-line tests. Although platform capability to do this might be promising, their value should not be overemphasised. In some situations, the assembly of a collection of learning objects will not be able to fulfil the desired purpose and a stand-alone dedicated software application might be the best solution. Both approaches are likely to continue to develop, along with other new methods, as trends in competence-based education and increasing interest in distance and collaborative learning create new demands for e-learning applications. To date, the EASA competition has mainly dealt with assembled learning resources — comprehensive learning modules — but also with research and generic tools. Its strength lies in the firm foundation of its evaluation methodology and the breadth and flexibility of its use of expert jurors. EASA is a body that admirably reflects current educational trends by involving such a broad range of juror panels coming from real educational practice. It therefore provides an ideal arena in which to demonstrate and test such new ideas and developments in the future.

In its ten years of existence EASA has developed the following characteristics:

- *A reliable process with stable criteria for evaluation*
innovation, design and ease of use, European portability, educational value, and evaluation of use;
- *Competence and familiarity in evaluating a wide variety of types of software*
from stand alone CDs to web-based, database driven systems;
- *Wide discipline interaction*
recent competitions have evaluated entries in 14 disciplines;
- *Wide European engagement*
recent competitions have evaluated entries from 16 countries;

- *A sustainable organisation and network*
only 5 current EKMA board members and financially contributing countries and 2 EKMA board associate members and countries, but a wide pool of volunteer discipline coordinators and jurors.

EKMA's next decade — supporting the design of e-learning

Earlier chapters of this book have detailed both the rigorous evaluation procedure that EASA has developed for the identification of top-quality software, and the informal but highly effective network of jurors and coordinators which make the evaluation process possible. The challenge for the future is to take the achievements of the competition and make them available as an ongoing and recognised service to European higher education.

Dissemination — EKMA as a software clearing house?

In addition to its selection of excellent academic software, the EASA competition is also intended to provide a way of disseminating examples of the very best practice.

All EASA finalists — and other entries — are currently detailed on the Web pages of each competition, often with links to further information provided by the authors, including demonstration material, updated versions and information on how to acquire the application.

A more spectacular showcase of these programs, and the good practices that they embody, is high on the future agenda of EKMA.

EKMA, in such a role as a clearing house, might provide examples of evaluated software that could be tagged as embodying 'good practice' according to the EASA quality criteria. This would provide concrete examples of recognised good practice, to act as guidance and benchmarks to other developers.

EKMA as a quality assurance e-learning body?

Regardless of improvements in hardware and delivery systems, users will continue to need access to quality-assured learning and teaching resources. It would be desirable — and should be possible — to set up an organisational body within higher education in Europe to evaluate software and other educational media, following agreed guidelines. In this respect the criteria used for the EASA competition should be regarded as a useful starting point for performing such evaluations. Moreover, the EASA criteria could act as useful

guidelines and checklists during the software development and production phases as well.

EKMA is considering working further on quality guidelines for the development and evaluation of educational software. The publication of such guidelines would increase its dissemination activities and could underpin the biennial competition with even better criteria. The quality guidelines could both explain the theory behind the criteria and function as recommendations for good practice. One should not mistake recommendations for rules, however, since 'one size does not fit all'. One of the main advantages of the use of technology and new media in education is that the wide variety of presentational methods can suit many types of learners, learning styles and learning situations: e.g. encyclopaedias, tutorials, simulations, case studies, automated tests, group work, etc. EKMA could provide quality guidelines, derived from the experience gained from carrying out numerous evaluations, which could suggest different ways to meet the criteria in these various different approaches.

If EKMA were also to undertake to set up the evaluation and accreditation function of a quality assurance e-learning body, it might also provide a register of accredited specialists who could peer review software according to the accepted standards. These people would, in the first instance, be drawn from the existing juror pool and, if the quantity of work was substantial, payment issues might need to be addressed, although this introduces a new problem, as EASA/EKMA has always encouraged the use of voluntary Discipline Coordinators, National Coordinators and jurors.

To become a quality assurance e-learning body of this type, one which would both guide development and evaluate products, would require considerable investment of time effort and finance by EKMA members.

EKMA as a forum and network for experts and developers?

By focusing on excellence, EASA has acted throughout as a means of encouraging the development of media and technology for supporting learning. EASA has been stimulating for the contestants as well as the jurors. During each competition, for a period of a few months, a broad array of evaluation criteria are applied and hundreds of people are involved in defining quality of educational software.

EKMA therefore has enormous potential as an ongoing forum for expert users and developers. Between the biennial competitions the network should be stimulated to stay connected and to build on its findings. EKMA should additionally become a forum for cross-exchange between disciplines, filling the void between the individual discipline-based work that is carried

out by subject associations and professional bodies, and that carried out by learning technology specialists.

Integrating the proposed guidance role of EKMA as a quality assurance agency and its role as a forum for exchange of knowledge and expertise could strengthen both functions. Through an attractive web-site, it could offer its experience in the form of good examples, illustrating in practice the implementation of the guidelines offered to teachers and designers. The guidelines would encompass current quality standards, and raise awareness of issues relating to portability, the use of learning objects, copyright issues, and collaboration between the academy and industry. Any such development must take into consideration the many existing e-learning good practice initiatives which already exist within Europe, and should seek to work collaboratively with them.

Taking facilitated collaboration one step further, EKMA could build on current trends in large-scale educational software production and use. Two such trends are immediately apparent: one advocates the idea of shared software development and use (Open Source) and the other points towards consortia, where each partner produces a part of the software and the others pay a small fee for the use of it. In all cases an apparatus for marketing, maintaining and updating the complete product is needed, and the expertise of EKMA/EASA could be a useful ingredient for such a service.

Once again, accomplishing such an expansion of EKMA's work would require additional resources, financial and human, but the benefits should be apparent to educational managers and national funding bodies alike.

The European perspective

A number of European countries are involved in EKMA and EASA, either on the board or as competitors, jurors, or discipline or national coordinators. From the outset, EKMA has had the ambition to support a European cultural perspective in the entries, and has encouraged entries in the many different European languages. By means of the evaluation criterion of 'European portability' the competition tries to encourage an approach by the authors that makes translation of the materials easier. Theoretically, software built by Europeans, which will easily accommodate the use of a variety of European languages, would be an attractive alternative in a US-dominated educational software market. There are issues embedded in this argument, however, which must be addressed if this ideal is to be realised. The ubiquitous use of (US) English in American software is not the only (nor even the most likely) reason for its unsuitability in many European countries. The educational approaches and assumptions underlying any software are

crucially important in determining its uptake outside its home country, or even its home institution. These underlying educational approaches and assumptions will be similarly built into software developed in any individual European country, and simply translating the content from one language to another will not necessarily make it suitable for use in another educational context. As the Bologna Declaration¹ facilitates a greater mobility of students within Europe, there will be a greater need for educational software to accommodate the different educational approaches used across Europe. It is these very differences which make study 'abroad' so attractive, and EKMA has a role to play in encouraging this diversity as vigorously as it currently encourages the use of national languages. The almost universal acceptance of (UK) English as the communication language of the EASA competition (although software can, and often is, submitted in varying European languages) has never reduced the passion with which educational methods have been debated in the juroring process, and in this may lie a clue to the way forward in developing truly open European software solutions.

By organising EASA and using the web-site for the dissemination of quality aspects and communication between community members, EKMA could lay the groundwork for ongoing development of knowledge media in and for Europe. EKMA could at least support the process by keeping track of the front line developments in a way comparable to the work accomplished in research, where respected journals and conferences foster 'the state of the art'. In doing this, EKMA would encourage member countries to maintain organisations that support the creation of technology-supported learning materials for European use. These organisations can learn from each other and could join forces to maintain a strong European position in the educational software arena.

The EKMA organisation depends on strong national membership

EKMA has, in the past, been exclusive, in that only a few European countries have been members. The national member organisations have been quite varied — from ministries of education, to single governmental departments, to state-funded educational units, to independent membership associations. National agencies and organisations have been able to grant long term membership of EKMA in a way that single departments have not been able to afford. It is noteworthy that the member countries have always submitted

1. The European Higher Education Area, Joint Declaration of the European Ministers of Education, convened in Bologna on the 19 June 1999; Online at: <http://www.mur.st.it/convegni/bologna99/dichiarazione/english.htm> or http://europa.eu.int/comm/education/policies/educ/bologna/bologna_en.html

more entries to EASA. Whilst this may be in part due to more organised publicity in member countries, efforts must be made to include more countries at a fundamental level of participation if EKMA is to grow and remain true to its core missions. Marketing EKMA to European governmental contacts and agencies will need to be an early priority if any of the other aims outlined in this chapter are to be achieved.

Summary and conclusion

In its first decade EKMA has succeeded in maintaining an organisational body to run a biennial competition with broad panels of expert jurors, and to build the basis of an expert community. EKMA is now moving into a new period, a second decade, which will see a growth in professionalism and maturity. EKMA's second decade will be successful only if more European countries become members and are represented on the board. This would then enable the establishment of a solid organisation with sufficient financial capability to continue to promote and organise the biennial EASA competition, to lay the groundwork for a European clearing house for quality educational software and provide a quality 'marque' for such independently refereed software, to develop and publish guidelines for the production of high quality materials which would be of value across Europe, and to build a community of expert practice, linked by shared Web-based communication, which could work together to enhance learning and teaching across an expanding Europe.

The future of evaluation in e-learning

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We asked several (European and non-European!) academics to give their viewpoint on evaluation in e-learning in the future. They have all been involved with the EASA/EKMA process within the past decade, as:

- a keynote speaker at NetLearning 2002, associated with EASA 2002 (Shirley Alexander)
- a competitor at EASA 1998 (Debra Marsh)
- a contributing EKMA member — 1999–2000 (J. Michael Spector, when he was at the University of Bergen, Norway)

The future: holistic, longitudinal studies of e-learning — Shirley Alexander

Rather than try to predict the future of e-learning and its evaluation, I have decided to base my few paragraphs on a preferred future. I do this because I think that e-learning is at a cross-roads. By and large, we have so far failed to deliver the much-promised gains of e-learning in terms of decreased costs of education and increased quality of learning, and hence business and governments are (perhaps quite rightly) beginning to question whether their investments in e-learning have been worth it. In fact, future funding for e-learning seems rather more uncertain now than ever before, and will remain so, until we can demonstrate more convincing evidence of its consequences.

The major problem, as I see it, is that we have consistently failed to learn the lessons of the history of the evolution of new technologies, where devel-

opers and inventors have been spectacularly unsuccessful in their attempts to dictate the eventual uses of their new technologies. A relevant example of this is the evolution of the telephone, originally conceived of by its inventors as a more modern and automated telegraph. The inventors 'told' users how they should use it (for business and efficiency purposes only) and actively discouraged its use as a device for sociability.

In fact it was not until some 20 years after the telephone's invention, that its promoters realised that it was not being adopted as rapidly as automobiles or electricity, and finally accepted and eventually promoted its use in facilitating social connectedness ('reach out and touch someone'). This was despite numerous earlier signs that this might be a significant and important use. In writing about the evolution of the telephone, Fischer ([6], 1992, p. 82) described the process as follows:

The story of how and why the telephone industry discovered sociability provides a few lessons in the nature of technological diffusion — it suggests that the promoters of a technology do not necessarily know or decide its final uses; that they seek problems or needs for which their technology is the answer, but that consumers themselves develop new uses and ultimately decide which will predominate.

There are of course many parallels with e-learning where 'experts' or product developers tell us how we should use it. Some talk about generations of e-learning in terms of advances in the technologies, while others profess the enormous gains to be made if only we would all adopt learning designs that are underpinned by notions of constructivism, or if we could facilitate learning through Communities of Practice. But where are the users' voices in these assertions? Where are the in-depth evaluations, eliciting the users' experience that support these statements?

The only way forward in my view, is for e-learning practitioners to undertake this important role of evaluation, and engage in evaluation practices which foreground the learners' experience of e-learning (with the technologies and context playing a supporting role), and undertake more holistic, longitudinal evaluation studies, rather than the short term 'Polaroid' evaluations of the present. We need to understand the consequences of e-learning over time and within a variety of contexts. As noted by Castells ([3], 2001, p. 28):

We engage in a process of learning by producing, in a virtuous feedback between the diffusion of technology and its enhancement . . . It is a proven lesson from the history of technology

that users are key producers of the technology, by adapting it to their uses and values, and ultimately transforming the technology itself.

Gaining a deeper understanding of the ways in which learners experience e-learning and then, as designers of e-learning, adapting e-learning to their uses and values, will help us to develop a deeper, more evidence-based understanding of important questions such as:

- which learners benefit from e-learning?
- how do learners approach e-learning in a variety of contexts and what do learners think that e-learning is good for?
- what is best achieved face-to-face, and what is best achieved online?
- what do students believe they have gained and/or lost as e-learners?
- how has learners' use of e-learning changed?

We can only start to answer these questions through detailed studies which take a holistic and longitudinal approach to the evaluation from the users' perspective.

Integrated approach to evaluation in e-learning — Debra Marsh

Men have become the tools of their tools

Henry David Thoreau (1817–1862)

The future of evaluation in e-learning will necessarily see a more integrated approach to establishing its objectives, desired outcomes and overall effectiveness. Evaluation will no longer consist of either a consideration of the technology or of the pedagogical innovation, but will consist of an approach which considers how the one supports the other, how together they represent an integral part of the learning process, and why in some cases the combination of a particular technology and a specified pedagogy are inappropriate.

Only through an integrated approach to evaluation can we hope to provide the essential data, feedback and support for those practitioners who are to face the challenge

to become familiar with the potential of the technology and to re-think their educational methods, processes and systems in order to effectively adapt and extend the technology to fit their context.

Britain & Liber, 2004 [2]

In 1998, I was the Project Leader of one of the EASA award finalists, Merlin, the University of Hull's own Web-based learning environment. Originally conceived and designed to support language learning, Merlin today supports a broad range of courses across diverse disciplines. The basic technological structure however has changed very little. The communication tools have remained predominantly asynchronous and text based. There is little integration of the Merlin administrative tools with the wider University structures and the tutor has access to quite rudimentary tracking tools.

When placed in comparative analysis with many of the commercially available VLEs (Virtual Learning Environments) such as Blackboard, WebCT or First Class, Merlin may well fall far below in terms of the number of features, functionality, flexibility of permissions and all the other criteria so often used to judge the appropriateness of a VLE for a particular institution. Yet some of the pedagogical practices adopted by those running courses and supporting learners online through Merlin are considered innovative, and indeed have been cited as excellent examples of best practice.

So where does this leave an institution considering the adoption of an e-learning tool such as Merlin? Where does this leave an individual who has for years effectively supported learners through a simple email system and well constructed web-pages, but is now required by his/her institution to move courses over to the institution's recently purchased commercial VLE? Probably in a quandary because there has been little integrated evaluation which allows for clarity of decision and judgement.

The future success of e-learning will lie in its ability to actively engage the key stakeholders, namely the learner and the e-facilitator/e-tutor, in the learning and teaching process. The recent success of *blogs* (Bowbrick, 2003 [1], Schofield, 2004 [8]) and *wikis* (Turnball, 2004 [14]) suggests that the key appears to lie in the sense of community — generated and supported by the software. For as Schuur (2002/03 [9]) suggests, 'the future approach to knowledge will be through networking, in communities of practice and on learning systems and processes within groups.'

The simple truth is, however, that no matter how technically sophisticated the technology may be, no matter how much video or audio can be delivered directly to the individual learner, and no matter what complexity or array of communication tools are available to the learners . . . the future of e-learning lies in the individual learner's ability to learn. And, in order to learn, the individual requires the tools which will support him/her appropriately within a given context and for a given need. The tools, the context and the need cannot be separated out, but require an integrated approach to evaluation in order for us to move forward. Only in this way will we avoid the perpetuation of current practice which sees many first time users of e-learning tools

‘seek to adapt the way they work to the way the software needs things to be done’ (Britain & Liber, 2004 [2]).

Next decade of evaluation of e-learning — J. Michael Spector

I have been asked to offer my vision about the next decade of evaluation of e-learning in a few brief paragraphs. This is not a simple task. First, it requires having a vision about how e-learning will evolve in the next ten years and that requires considerable visionary insight. Second, a sense for how evaluation is evolving within the context of changes in e-learning is necessary. I claim no particular expertise or qualification in this regard other than being someone who has observed many changes and developments in educational technology over the years.

What seems to have been happening is that developments in learning technology have tracked developments in information technology with about a one-generation delay. When new information and communications technologies (ICT) become well-established in business and industry, educational researchers and developers begin to find ways to integrate them into learning and instruction. The educational community is just now beginning to make use of knowledge management systems for learning and instruction whereas business and industry have been making effective use of these systems for about ten years (Spector, 2002 [10]; Spector & Edmonds, 2002 [12]). Learning objects, which can be regarded as an extension of object-oriented design and development (Wiley, 2002 [15]), represent another example of this delay in integrating ICT into learning and instruction.

Changes in technology are pervasive in the world of distance and distributed learning. E-learning is not the same as it was ten years ago. Video-conferencing, e-mail and text-based computer conferencing were dominant delivery media 10 years ago. In a matter of a few years, the instructional focus has shifted from delivery to learning activities, and technologies are making possible many new kinds of learning activities. Examples include Web-based interactive simulations, Internet-facilitated collaborative data gathering and analysis, and learner modification of a variety of learning objects. One outcome of these changes is that the traditional distinction between learning and working environments is being blurred, and this blending of learning and working activities is likely to continue (Spector & Wang, 2002 [13]).

The emphasis on learning activities has led to changes in how educational technologies are being evaluated (de la Teja, Lundgren-Cayrol, Ganesan &

Spector, 2003 [5]). The role of activity theory in education is increasingly evident (Nardi, 1996 [7]). Qualitative evaluation studies constructed around activity systems are increasingly prevalent, as are mixed method evaluations. These trends reflect the challenges and complexity of investigating learning and instruction.

Alongside these changes is a growing interest in using e-learning and other technologies to support learning in and about complex domains — those domains with ill-structured problems and few standard solutions that are subject to dynamic changes among many interrelated components (Davidsen & Spector, 1997 [4]). How is progress of learning or acquisition of expertise to be assessed in such domains as engineering design, environmental planning, medical diagnosis and social policy formulation? Such complex domains are of increasing importance and are vital to sustaining progress on a global basis. One methodology that may prove useful in future evaluations of e-learning, especially in complex domains, is based on learner-constructed representations of mental models (Spector, Christensen, Sioutine, & McCormack, 2001 [11]).

Having made these comments, I arrive at the conclusion that I do not have a clear vision about the next ten years of evaluation in the area of e-learning. What I have is a hope that, through the use of e-learning and other technologies, learning and instruction will contribute to improved understanding of complex domains, and thereby help individuals and societies towards more meaningful and fulfilled futures. Evaluation plays a critical role in such an enterprise. Evaluation is necessary in order to make steady progress in the design and implementation of learning and instruction.

I conclude with an acronym that I use in my classes — WYMIWYG — pronounced ‘whim-eee-whig’. It stands for ‘what you measure is what you get’. We should take our measurements seriously and use them to improve what we know about e-learning.

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Appendices

EKMA Statutes

European Knowledge Media Association

Articles of the association

I. Name, domicile, duration and objects

Article 1

UNDER the name of European Knowledge Media Association (hereinafter 'EKMA'), there has been incorporated a 'non-profit' Association within the meaning of Articles 60ss of the Swiss Civil Code. The Association has its domicile in Cortaillod, Switzerland, and has been founded for an undetermined period of time. The activities of the Association may be carried on throughout the world.

Article 2

The following terms shall for the purpose of these Articles have the respective meaning specified in this Article 2. The term 'Member' means a member of the Association. The term 'Association' means EKMA.

Article 3

The objects of the Association are :

a) to stimulate the understanding, development and use of knowledge media across Europe, primarily within Higher Education; b) to disseminate within Europe information concerning the understanding, development and use of knowledge media.

The Association can undertake every necessary thing in order to achieve its aims. It can in particular organise activities such as biennial competitions.

II. Membership

Article 4

The Association is formed of collective members : national organisations pursuing similar aims than those of the Association and any other country or any other entity admitted as a member by the General Assembly.

All members must agree to abide by the objects under Article 3.

The natural persons who acceded to the object of Article 3 can also become individual members on a decision of the General Assembly.

Article 5

The minimum duration of membership is two years. After this time a member may terminate its membership in the Association by giving notice by registered letter to the Executive Committee not later than six months before the end of any financial year.

Article 6

The General assembly may for legitimate reasons terminate the membership of any member at any time, in particular if the member has acted contrary to the objects of the Association or Regulations adopted by the General Assembly, or has violated the obligations of a member.

Article 7

The membership of any member shall end :

- if it ceases to pay the contribution
- by decision of the General Assembly.

Article 8

In the event of termination of or withdrawal by any member :

a) These Articles shall continue to be applicable to the other remaining members b) The outgoing member shall at the effective date of termination or withdrawal cease immediately to use the name EKMA and related logos c) The outgoing member shall not be entitled to claim any share or profit from the Association or any compensation or other payment following termination or withdrawal.

Article 9

The Association is only liable for the debts it might have contracted to the extend of its social goods. Any other supplementary, personnel responsibility of its members is explicitly excluded.

III. Funds

Article 10

The Association's funds shall consist of :

a) annual contributions paid by the members as they are fixed by the General Assembly but not exceeding CHFr. 15.000.-- a year for the collective member and CHFr. 700.-- a year for the individual members b) other contributions and donations given to the Association

IV. Organisation

Article 11

The organisation of the Association is formed of the following : — General Assembly — Executive Committee — Management — Auditors.

V. General Assembly

Article 12

The General Assembly shall be the sovereign power of the Association. In particular it shall have the following inalienable duties :

1. to alter the present articles;
2. to issue, amend or revoke regulations;
3. to elect the members of the Executive Committee (it means the Chairman, Vice-Chairman, the Treasurer and the other members);
4. to elect the Auditors;
5. to accept the Executive Committee's reports, approve the annual accounts of the Association and the Executive Committee's annual report, pass resolutions on the appropriation of any net surplus and approve the Executive Committee's acts in the performance of its functions;
6. to admit and to exclude members from the Association;
7. to fix the annual contribution which shall not exceed CHFr. 15.000.-- for the collective members and max. CHFr. 700.-- for the individual members;

8. to dissolve and liquidate the Association;
9. to make decisions about all matters submitted by the Executive Committee;
10. to approve the general policy and the regulations established by the Executive Committee;
11. to elect the international jury committee.

Article 13

The annual General Assembly shall be held every year within six months following the closing of the financial year. It shall be convened by the Executive Committee and may be held in Switzerland or any other country.

Extraordinary General Assemblies may be convened at any time by the Executive Committee whenever required in the interests of the Association. In addition, 1/5 or more of the members may request an Extraordinary General Assembly to be called at any time, stating the matters to be included in the Agenda. In such a case, the Extraordinary General Assembly shall take place within 60 days.

All members of the Association together may, if none of them objects, hold a so-called universal meeting where all members are present or represented and in such case the provisions laid down for convening a General Assembly (art. 14) need not to be observed. Such a meeting shall have the authority to debate and pass resolutions on all matters coming within the power of the General Assembly provided always that all members of the Association are present or represented.

According to the provisions of Art. 19, a General Assembly can also be validly held by way of circulation and make decisions by writing.

Article 14

Notice of a General Assembly has to be served at least 30 days prior to the date of the meeting. The notice shall set out the items on the agenda and, if an amendment to the articles is proposed, then the proposed draft text must be given.

Article 15

Each member shall have one vote in the General Assembly. The General Assembly can only make decisions on matters included on the agenda, excepted decisions made in universal meeting (see article 13 al. 3).

Article 16

The General Assembly shall be presided over by the Chairman of the Executive Committee or in his absence by the Vice-Chairman or any other member of the Executive Committee elected by the Assembly. In the event that no member of the Executive Committee is present, the Assembly shall elect a *ad interim* chairman for that meeting.

Article 17

Resolutions of the General Assembly shall be passed by a simple majority of the votes of those members of the Association who are present or represented.

In the event of equality of the votes, the Chairman of the Executive Committee, or in his absence the Vice-Chairman, or in his absence any other member of the Executive Committee elected by the meeting or, in his absence a *ad interim* elected chairman has, according to article 16 of the present statutes, a casting vote.

Three four majority of the votes of those members of the Association who are present or validly represented shall always be necessary in the case set out hereinafter : 1. to alter the articles; 2. to issue, amend or revoke regulations; 3. to dissolve and liquidate the Association.

Article 18

The members of the Executive Committee shall be elected by secret ballot if so requested by any member. All other voting shall be by a show of hands unless the Chairman orders a secret ballot or the General Assembly so resolves.

Article 19

Provided that all members of the Association agree unanimously with that way of doing, resolutions of the General Assembly may also be passed in writing and circulated for signature. The members express then by writing on resolutions they have to make, for example, in signing a circular or in signing and in filling up the submitted questionnaire.

VI. Executive Committee

Article 20

The Executive Committee shall have full authority to act on behalf of the Association in so far as its action is in conformity with the laws and with these present statutes. The Executive Committee shall, in particular, be responsible for formulation general policy and regulations regarding professional practice, ethics and independence, etc., on condition it is approved by the General Assembly.

In particular it shall be the Executive Committee's duty to :

1. represent the Association in its relationship with third parties;
2. prepare and organise the General Assembly; this shall include preparing the annual accounts of the Association, the annual report to the General Assembly and the budget;
3. keep the register of members;
4. appoint and supervise the management.

Article 21

The Executive Committee shall consist of not less than 3 members (Chairman, Vice-Chairman, Treasurer) who shall be elected for a term of two financial years and be eligible for re-election. The end of their office shall coincide with the day of the Annual General Assembly held to debate the second financial year following their election. In the event of any new members being elected to fill casual vacancies during a term of office, the new members shall complete the term of office of their predecessors.

All members of the Executive Committee shall be elected by the General Assembly. The Executive Secretary needs not to be a member of the Association.

The Executive Committee shall bind the Association with the single signature of its Chairman or of its Treasurer.

Article 22

The Executive Committee shall meet as often as the requirement of business require. Any member of the Executive Committee may request a meeting to be called, stating his reasons in written form.

Article 23

The quorum of a meeting of the Executive Committee shall be two-thirds of the memberships of the Executive Committee.

Resolutions of the Executive Committee shall be passed by a simple majority of the members present. The Chairman shall also vote and shall have the casting vote in the event of equality of voting.

Resolutions of the Executive Committee may also be passed in writing and circulated for signature of all the members provided no member requests a verbal debate.

A written record to be signed by the Chairman and the Secretary of the session shall be kept of the debates and resolutions of the Executive Committee.

Article 24

The Executive Committee may propose when it deems it is advisable regulations for the management of the Association and its members, which regulations shall be binding on all members when they are accepted by the General Assembly and which, among other things, may contain professional standard and principles. All these proposals have to be approved by the General Assembly.

VII. Management

Article 25

The management shall be appointed and supervised by the Executive Committee. The management shall be formed of X persons and one Chairman.

The day-to-day operation of the Association shall be performed under the control and the responsibility of the Executive Committee.

The management can make recommendations concerning the financial arrangements and the annual business plans and budgets of the Association which are established at regular intervals by the Executive Committee.

VIII. Financial year and auditors

Article 26

The financial year of the Association shall coincide with the calendar year.

Article 27

The annual General Assembly shall appoint auditors to hold office for a term of two years. The auditors need not to be members of the Association and legal entities shall be eligible for election.

The auditors shall examine the annual accounts of the Association. They shall submit a written report on the accounts of the Association and on the findings of their audit to the annual General Assembly.

IX. Dissolution

Article 28

Within the limits of laws, the Association may be dissolved at any time by a resolution of the General Assembly, approved by three fourths of the present or represented members of the Association.

After dissolution and liquidation of the Association, any net assets of the Association remaining after deduction of all liabilities of the Association and of the expenses of dissolution shall be distributed in equal shares to the remaining funding bodies of the members of the Association and in default of founder members to the other remaining members.

X. Applicable law, arbitration and Miscellaneous

Article 29

The Association and the relationship among its members shall be governed by law of Switzerland and these articles in so far as they respect the law of Switzerland.

Article 30

Any dispute between members or between members and the Association concerning :

- a. members' rights and obligations; b. the activities of the Association; or
- c. the interpretation of these

articles, shall first try to be resolved amicably inside the Association and in case of failure, such dispute shall be referred to a court of arbitration at Boudry for conciliation and should the occasion arise for judgment

Article 31

In case of invalidity or illegality of either article, the remaining articles maintain their value and continue to be enforceable.

XI. Effective date and registration

Article 32

These articles have been adopted by the funding members whose names are listed in Appendix 1 hereto and shall become effective as of 10 July 1998.

In case of litigations, the articles in french written are the authentic text.

Article 33

The Association EKMA shall be entered in the Commercial Register at Boudry, Swiss.

EKMA has filed a Community Trade Mark Application EKMA to the Office for Harmonisation in the Internal Market in Alicante on the 11 of December 1997 under the number 000673509 and will also register the EKMA Trade Mark in Switzerland.

The Association will allow its members representing different countries where the Trade Marks have been registered, to use them freely for all their activities in relation with the aims of the Association. In the event that any national Association or other national institute, member of EKMA will leave the Association (exclusion or withdrawal), it hereby will automatically lose the right to use these Trade Marks, according to article 8, letter *b* here above.

Cortailod, the 20 May 1998.

Statuts EKMA

European Knowledge Media Association

Articles de l'Association

I. Nom, domicile, durée et buts

Article premier

Sous le nom de *European Knowledge Media Association* (ci-après EKMA), est constituée une association à but « non lucratif » au sens des Articles 60ss du code civil suisse. L'association est domiciliée à Cortaillod, Suisse ; sa durée est indéterminée. Les activités de l'association peuvent se développer partout dans le monde.

Article 2

Au sens des Articles des présents statuts, les termes suivants ont la signification précisée dans cet Article 2 , à savoir : le terme « membre » signifie un membre de l'association, le terme « Association » signifie EKMA.

Article 3

Les buts de l'association sont :

a) stimuler la compréhension, le développement et l'usage des médias à travers l'Europe, tout particulièrement au niveau universitaire ; b) propager en Europe l'information concernant la compréhension, le développement et l'usage des médias de la connaissance.

L'Association est libre d'entreprendre tout ce qui est nécessaire à la réalisation de ses buts. Elle peut notamment organiser des activités comme par exemple des compétitions bisanuelles.

II. Adhésion

Article 4

L'Association compte des membres collectifs : organisations nationales poursuivant des buts similaires à ceux de l'Association et tout pays ou toute entité admis par l'Assemblée Générale. Tous les membres se conforment aux objectifs décrits à l'art. 3. Les personnes physiques qui adhèrent aux objectifs de l'art. 3 peuvent aussi sur décision de l'Assemblée Générale devenir membres de l'Association (membres individuels).

Article 5

La durée minimale d'une participation est de deux ans. Après cette période, un membre peut démissionner en le notifiant par lettre recommandée adressée au Comité Exécutif au plus tard six mois avant la fin de l'exercice en cours.

Article 6

L'Assemblée Générale peut exclure un membre, en tout temps, pour de justes motifs, soit en particulier si ce membre a agi contrairement aux buts de l'Association ou aux règlements adoptés par l'Assemblée Générale ou s'il a violé ses obligations.

Article 7

La participation d'un membre prend fin :

- s'il cesse de payer ses cotisations
- par décision d'exclusion de l'Assemblée Générale.

Article 8

En cas d'exclusion ou de démission d'un membre, a) Les présents statuts continueront à s'appliquer aux autres membres restants. b) Il sera interdit au membre démissionnaire ou exclu de faire référence de quelque manière à l'Association, et en particulier d'en utiliser ses noms et logos. c) Le membre sortant n'a droit à aucune participation ou avantages de l'Association, à aucune compensation financière à la suite d'une exclusion ou d'une démission.

Article 9

L'Association répond sur ses seuls avoirs sociaux des dettes qu'elle peut avoir contractées. Une responsabilité personnelle additionnelle de ses membres est expressément exclue.

III. Ressources*Article 10*

Les ressources de l'Association sont :

a) les cotisations annuelles versées par les membres telles que fixées par l'Assemblée Générale, mais s'élevant au maximum à CHF. 15'000.-- par an pour les membres collectifs et à CHF. 700.-- par an pour les membres individuels. b) les autres contributions et donations faites à l'Association.

IV. Organisation*Article 11*

L'organisation de l'Association comporte : l'Assemblée Générale, le Comité Exécutif, l'Administration et les Vérificateurs de comptes.

V. Assemblée Générale*Article 12*

L'Assemblée Générale est le pouvoir suprême l'Association. Elle a les attributions inaliénables suivantes :

1. modifier les présents statuts ;
2. émettre, modifier ou annuler des règlements ;
3. élire les membres du Comité Exécutif (soit le Président, Vice-Président, le Trésorier, ainsi que tous les autres membres) ;
4. élire les Vérificateurs de comptes ;
5. accepter les différents rapports du Comité Exécutif, approuver les comptes annuels de l'Association et le rapport annuel du Comité Exécutif, prendre des décisions concernant l'attribution d'éventuels excédents financiers et approuver les actions du Comité Exécutif dans l'exercice de ses fonctions ;
6. admettre et exclure des membres de l'Association ;
7. décider du montant de la cotisation annuelle qui sera au maximum de CHF. 15'000-- pour les membres collectifs et de CHF. 700.-- pour les membres individuels ;

8. dissoudre et liquider l'Association ;
9. prendre les décisions sur les sujets qui lui sont soumis par le Comité Exécutif ;
10. approuver la politique générale suivie par le Comité Exécutif et les règlements établis par celui-ci.
11. élire la commission internationale du jury.

L'Assemblée Générale statue sur toutes les affaires qui ne sont pas du ressort d'autres organes sociaux.

Article 13

L'Assemblée Générale Ordinaire a lieu chaque année dans les six mois qui suivent la clôture de l'exercice ; elle est convoquée par le Comité Exécutif ; elle peut être tenue en Suisse ou dans tout autre pays.

Des Assemblées Générales Extraordinaires peuvent être convoquées en tout temps par le Comité Exécutif chaque fois que cela est nécessaire dans l'intérêt de l'Association. En outre, 1/5 ou plus des membres peuvent en tout temps exiger la convocation d'une Assemblée Générale Extraordinaire, en spécifiant les matières qui seront portées à l'ordre du jour. Dans pareil cas, l'Assemblée Générale Extraordinaire a lieu dans les 60 jours.

Si l'ensemble des membres de l'Association se trouvent réunis ou sont représentés et décident à l'unanimité de tenir d'une Assemblée Générale, celle-ci sera qualifiée d'universelle et pourra intervenir valablement même si les dispositions sur la convocation de l'Assemblée générale (article 14 ci-dessous) n'ont pas été observées. L'Assemblée universelle est autorisée à débattre et à prendre des décisions concernant toutes les matières dépendant des compétences de l'Assemblée générale, pour autant que sa tenue ait valablement été décidée selon le présent alinéa.

Selon la procédure prévue à l'article 19 ci-dessus, une Assemblée Générale peut également être valablement tenue par voie de circulation et prendre ses décisions par écrit.

Article 14

La convocation à l'Assemblée Générale doit parvenir au moins trente jours avant la date fixée pour l'Assemblée. La convocation doit préciser l'ordre du jour et, si un amendement à un ou plusieurs articles des statuts est demandé, une proposition de texte doit être annexée à la convocation.

Article 15

Chaque membre a une voix à l'Assemblée Générale. L'Assemblée Générale ne peut prendre des décisions que sur les objets portés à l'ordre du jour, sous réserve des décisions prises en Assemblée universelle, au sens de l'art. 13 al. 3 des présents statuts.

Article 16

L'Assemblée Générale est présidée par le Président du Comité Exécutif ou, en son absence, par le Vice-Président ou un autre membre du Comité Exécutif élu par l'Assemblée. Au cas où aucun membre du Comité Exécutif n'est présent, l'Assemblée élit un Président ad intérim pour cette réunion.

Article 17

Les décisions de l'Assemblée Générale sont prises à la majorité simple des voix des membres de l'Association présents ou valablement représentés. En cas d'égalité des voix, le Président du Comité Exécutif, à défaut le Vice-Président, à défaut un autre membre du Comité Exécutif élu par l'Assemblée Générale, ou à défaut un Président ad intérim au sens de l'art. 16 des présents statuts a une voix prépondérante. Une majorité qualifiée des trois quarts des voix des membres de l'Association, présents ou valablement représentés, est requise pour modifier les statuts ; pour émettre, amender ou annuler des règlements ; pour dissoudre et liquider l'Association.

Article 18

Si cela est demandé par un membre, les membres du Comité Exécutif seront élus au bulletin secret. Tous les autres votes se font à mains levées, à moins que le Président n'ordonne un vote secret ou que l'Assemblée Générale le décide.

Article 19

Pour autant que les membres de l'Association l'acceptent de manière unanime, une Assemblée Générale peut aussi se tenir par voie de circulation. Ses membres se prononcent alors par écrit sur les décisions qu'il leur est demandé de prendre, par exemple en signant une circulaire ou en signant et en remplissant un questionnaire qui leur serait soumis.

VI. Le Comité Exécutif

Article 20

Le Comité Exécutif a l'entière autorité pour agir au nom de l'Association, pour autant que son action soit conforme à la Loi et aux présents statuts. Le Comité Exécutif est, en particulier, responsable de la formulation de la politique générale et des règlements concernant la pratique professionnelle, l'éthique et l'indépendance, etc. moyennant l'approbation de l'Assemblée Générale.

En particulier, il est du devoir du Comité Exécutif de :

1. représenter l'Association dans ses relations avec des tiers ;
2. préparer et organiser l'Assemblée Générale ; y compris l'élaboration des comptes annuels de l'Association, le rapport annuel destiné à l'Assemblée Générale et le budget ;
3. tenir le registre des membres ;
4. nommer et contrôler l'Administration.

Article 21

Le Comité Exécutif est composé de trois membres au minimum (le Président, le Vice-Président et le Trésorier) qui sont élus pour une durée de deux exercices avec possibilité de ré-élection. La fin de leur mandat coïncide avec le jour de l'Assemblée Générale Ordinaire tenue en vue du second exercice suivant leur élection. Dans le cas où un nouveau membre a été élu pour remplir une vacance éventuelle, le nouveau membre achèvera le mandat de son prédécesseur.

Tous les membres du Comité Exécutif sont élus par l'Assemblée Générale. Le secrétaire exécutif ne doit pas nécessairement être un membre de l'Association.

Le Comité Exécutif engage l'Association par la signature individuelle de son Président ou de son Trésorier.

Article 22

Le Comité Exécutif se réunit aussi souvent que l'exige la conduite des affaires. Tout membre du Comité Exécutif peut demander une réunion du comité, en indiquant ses raisons par écrit.

Article 23

Le Comité Exécutif se réunit valablement si les deux-tiers de ses membres sont présents.

Les décisions du Comité Exécutif sont adoptées à la majorité simple des membres présents. Le Président vote également et son vote sera déterminant en cas d'égalité des voix.

Les séances du Comité Exécutif peuvent se tenir par voie de circulation, les décisions du Comité Exécutif se prennent alors par écrit, à l'aide d'une circulaire signée par tous les membres, sous réserve qu'un débat oral soit exigé par l'un d'eux.

Un rapport écrit signé par le Président et le Secrétaire de la session contient les débats et les résolutions du Comité Exécutif.

Article 24

Le Comité Exécutif peut proposer, lorsqu'il le juge utile, des règlements pour la direction de l'Association et de ses membres qui, une fois adoptés par l'Assemblée générale, sont obligatoires pour tous les membres et qui, entre autres, peuvent contenir des standards professionnels et des principes. Toutes ces propositions doivent être approuvées par l'Assemblée Générale.

VII. Administration (Direction)

Article 25

L'Administration est nommée et contrôlée par le Comité Exécutif. Elle est composée de X personnes et d'un Président.

Le fonctionnement quotidien de l'Association sera exécuté par l'Administration sous le contrôle et la responsabilité du Comité Exécutif.

L'Administration peut faire des recommandations concernant le financement, les plans de développement et les budgets de l'Association, qui sont établis à intervalles réguliers par le Comité Exécutif.

VIII. Exercice Annuel et Vérificateurs de Comptes

Article 26

L'exercice de l'Association coïncide avec le calendrier annuel.

Article 27

L'Assemblée Générale Ordinaire nomme les Vérificateurs de comptes pour une période de deux ans. Les Vérificateurs ne sont pas nécessairement membres de l'Association. Des personnes morales peuvent être éligibles.

Les Vérificateurs examinent les comptes annuels de l'Association. Ils soumettent un rapport écrit sur les comptes de l'Association et sur leurs conclusions, après vérifications, à l'Assemblée Générale Ordinaire.

IX. Dissolution

Article 28

Dans les limites de la loi, l'Association peut être dissoute en tout temps par une décision de l'Assemblée Générale, décision approuvée par les trois quarts des membres présents ou représentés à l'Assemblée Générale.

Après la dissolution et la liquidation de l'Association, l'actif net de l'Association, après déduction du passif et des dépenses découlant de la dissolution, sera distribué à parts égales entre l'ensemble des membres fondateurs encore présents au sein de l'Association, à défaut entre les autres membres restant.

X. Loi applicable, arbitrage et divers

Article 29

L'Association et les relations entre ses membres sont soumises au droit suisse et aux présents statuts, dans la mesure où ils sont conformes à ce droit.

Article 30

Toute dispute entre membres ou entre membres et l'Association concernant

(a) les droits des membres et leurs devoirs ; (b) les activités de l'Association ; (c) l'interprétation des présents statuts ;

fera d'abord l'objet d'une tentative de règlement amiable à l'interne de l'Association et en cas d'échec sera soumise à un tribunal arbitral dont le siège sera à Boudry en Suisse, pour conciliation, cas échéant jugement, conformément aux dispositions du Concordat Intercantonal Suisse sur l'Arbitrage.

Article 31

En cas d'invalidité ou d'illégalité de l'une ou l'autre des clauses des présents statuts, les clauses restantes conservent leur valeur et demeurent applicables.

XI. Mise en vigueur et enregistrement*Article 32*

Ces présents statuts sont adoptés par les membres fondateurs dont les noms sont mentionnés sur la liste constituant l'appendice 1 annexée à la présente et entrent en vigueur le 10 juillet 1998

Article 33

L'Association EKMA Europe est inscrite au Registre Suisse du Commerce de son siège situé à Boudry.

EKMA Europe a déposé une demande d'enregistrement de la marque communautaire EKMA auprès de l'Office de l'harmonisation du marché intérieur à Alicante le 11 décembre 1997, sous le No 000673509 et enregistrera la marque EKMA pour la Suisse également.

L'Association autorisera ses membres représentants des différents Etats pour lesquels les marques ont été enregistrées, à les utiliser gratuitement pour toutes leurs activités en relation avec les buts de l'Association. Au cas où l'une des Associations nationales ou autres institutions nationales membres d'EKMA Europe viendrait à quitter l'Association (démission ou exclusion), elle perdrait le droit d'utiliser ces marques, selon l'article 8 lettre *b* ci-dessus.

Members of the EKMA board

National representatives from 1994 (italics indicate current representatives)

Austria

1994–2000

Hans-Peter Axmann

2000–

Irene Hyna

*Austrian Federal Ministry for Education, Science and Culture
(BMBWK)*

irene.hyna@bmbwk.gv.at

France (associate member from 2003)

1994–

Rachel Panckhurst

Université Montpellier 3

rachel.panckhurst@univ-montp3.fr

Germany (associate member from 2003)

1994–2000

Adolf Schreiner

University of Karlsruhe

2000–

Wilhelm Held (represented by *Benno Süselbeck* at meetings;

suselbe@uni-muenster.de)

University of Münster

Netherlands

1994–2000
Wim Liebrand (chair 1994–1998)
2000–
Bas Cordewener
SURF Foundation
Cordewener@surf.nl

Norway

1999–2000
J. Michael Spector
University of Bergen

Sweden

1994–1998
Hans Jalling
1998–2000
Johannes Hylander
2001
Sandor Gyulai
2001–
Göran Petersson (chair 2002–)
Council for the Renewal of Higher Education
goran.petersson@netuniversity.se

Switzerland

1994–
Martin Lehmann (treasurer 1994–2000)
Engineering consultant
lehmann@bipinfo.ch
The Federal Office for Education and Science;
University of Applied Sciences — LeLocle;
University of Neuchâtel

United Kingdom

1994–1998
Nick Hammond
Association for Learning Technology (ALT)
1998–2002
Jonathan Darby (chair) (ALT)
2000–2002

John Brown (treasurer)
British Educational Communications and Technology Agency
(Becta)
2002–2003
Joyce Martin (treasurer) (Becta)
2003–
Rhonda Riachi (treasurer) (ALT)
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Association for Learning Technology (ALT); Oxford Brookes Uni-
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