Preface

With the growth of e-learning and distance education, there is an increasingly pressing need for research and writing on the pedagogy of e-learning today. Teams are, or should be, an integral component of e-learning. This book develops this concept by investigating many issues around teams in the virtual and hybrid classroom, bringing together in a single accessible source a variety of current research and practice on the subject of virtual and collaborative teams in teaching and learning.

Teams and E-Learning in the 21st Century

Electronic education is rapidly becoming a fixture in higher education. Today it is clear that the use of computer and digital technologies in teaching and learning is here to stay—not just through the increase of distance learning or virtual courses, but through the use of cyber-education as an adjunct to the traditional classroom. This is clear in the increased access to technology in higher education, and the continuing growth of online courses globally. Teaching is irrevocably changed, with access to computers and Internet technologies now all but universal for faculty members in the United States (Higher Education on the Web, 2002). Learning is similarly impacted, with over 1.9 million students in the U. S. studying online in the fall of 2003 and a projected growth in online enrolment of 20% a year—a growth rate exceeding the overall expected growth for the entire higher education student population (Sloan Consortium, 2004). Institutions of higher education clearly accept the importance of virtual education. The “instructional integration of information technology”
was reported by CIOs in the U. S. as the “single most important IT issue” confronting their institutions over the next two-to-three years (National Survey of Information Technology in US Higher Education, 2004). This raises some important considerations for educators. Ultimately, the issue is whether we as educators are prepared to incorporate and use technology effectively in our teaching.

While extensive literature on the use of virtual teams in business and industry does exist, the literature on educational use of teams is scarce. Some of the lessons for virtual teams from industry are useful in educational settings, but there are important differences. Virtual teams in a business are set up to primarily accomplish a goal, while education involves an additional dimension: that of helping students learn how to operate in teams. This book gives multiple examples of how students can effectively learn to work in teams in universities around the globe.

As we have previously noted, there is a relative lack of research on the pedagogy of e-learning. However, we believe that existing “traditional” pedagogy can be used to improve teaching and increase student online learning. One important and enduring pedagogy available for improvement of e-learning and teaching is collaborative learning. Various names have been given to this form of teaching, and there are some distinctions among these: cooperative learning, collaborative learning, collective learning, learning communities, peer teaching, peer learning, reciprocal learning, team learning, study circles, study groups, and work groups. This book focuses on collaborative learning with virtual teams.

Collaborative learning through the grouping of students for the purpose of achieving an academic goal has been widely researched and advocated throughout the professional literature. Here the term “collaborative learning” refers to an instruction method in which students at various performance levels work together in small groups or teams toward a common goal. The students are responsible for one another’s learning as well as their own. Thus, the success of one student helps other students to be successful.

Collaborative learning is particularly effective in teaching and learning with virtual teams. As Davis (1993) points out in her classic text, *Tools for Teaching*, active learning occurring in small groups is the best method of learning. She cites extensive research that has found student learning and retention in small group or team learning to be stronger than through other instructional and learning techniques.

It may be noted that we have, thus far, been using the terms “teams” and “groups” somewhat interchangeably, as is the accepted convention in much of the pedagogical literature on collaborative learning. Specifically, we define
teams or groups by their generally accepted definition (and following our earlier book—see Godar & Ferris, 2004). By this definition, teams or groups have specific characteristics, including: size, groups should be small enough for mutual awareness; interdependence, or a mutually interdependent purpose/goal; and interaction, or active communication and feedback among group members. Additionally, cohesion, or a sense of belonging, and cooperation among the members, help define group identity.

In this book, the common definition of teams and groups is, of course, modified to incorporate the element of virtuality, or working either partially or wholly in the medium of cyberspace. Virtual teams avail themselves of an array of computer, digital and telecommunication technologies. They can be utilized in virtual classes as well as an added pedagogical element in “traditional” classes.

In teaching and learning environments, virtual teams can take several forms that include, but are not limited to, the following:

- Activity groups/teams or temporary groups, formed to accomplish specific activities, and/or to meet affiliation needs.
- Problem-solving groups/teams, formed to address some condition or problems.
- Personal growth groups/teams, which help members engage in personal learning and growth through the development personal insights, overcoming of problems, and growth through feedback and support.
- Learning groups/teams, which are formed as a medium for learning and participants’ growth. Such teams may complete their work in a single class (such as a laboratory experiment) or over a length of time (for example, by carrying out a project, conducting research).

The chapters in this book provide excellent examples of all these types of virtual groups/teams.

**The Contribution of This Book**

This book continues the cross-disciplinary and collaborative conversations begun in our previous book about the potentials of virtual teams. We bring together academics from a variety of disciplines, including business, communication, education, psychology and information technology. They represent perspectives on teaching and learning from a broad range of academic institutions—from private to public comprehensive, teaching to research, and from state and national to international. Excitingly, our authors also represent the
power of both student and author collaborations. Not only do chapters provide examples of international collaborations between student virtual teams, but a number of our authors have written chapters “virtually,” collaborating in their writing with colleagues across the United States and the world. International academic perspectives represented here range from France, Belgium and Poland to South Africa and Singapore.

In innovative and visionary ways of discussing issues of teaching and learning in virtual education in general, and virtual teams in particular, the authors in this book provide a transformative view of academia. They epitomize the revolutionary Carnegie Model of scholarship (Boyer, 1990; Ferris, Minielli, Phillips, & Mallard, 2003) in their treatments of teaching and learning. Their various chapters demonstrate a rethinking of basic notions of teaching and illustrate the concept of teacher as scholar and teacher as learner. As knowledgeable scholars who integrate teaching into, rather than separate it from, research, the authors in this book not only provide excellent examples of the Carnegie Model of scholarship, but exemplify the potentials of collaborative, inter-disciplinary research.

The Organization of This Book

This book has 12 chapters, divided into four sections. Here we briefly describe each section and its accompanying chapters.

Section I: From E-Learning to Learning in Virtual Teams

Not only has it become vital that we deal with issues of e-learning and its accompanying pedagogy in education today (as we have discussed quite extensively above), but it is equally essential that we expand the pedagogy on the use of virtual teams in the classroom. Research has repeatedly and consistently found small group or team learning creates engaged and successful students, but pedagogical research on the issue is scarce. The authors in the four chapters in this section demonstrate the importance of moving from e-learning to learning in virtual teams.

In Chapter I, Diane Boehm of Saginaw Valley State University in Michigan and Lilianna Aniola-Jedrzejek of the Poznan University of Technology in Poland build on Chickering and Gramson’s popular article, “Seven principles of good practice in undergraduate education,” extending and “distilling” these
principles to virtual student collaborations. Using their experiences with projects involving several different teams of Polish and American students, Boehm and Aniola-Jedrzejek offer both detailed examples and concrete advice for instructors interested in successful virtual and international collaborative student projects.

In Chapter II, Pieter du Toit of the University of Pretoria in South Africa and Peter van Petegem of the University of Antwerp in Belgium present a psychological model for e-learning in virtual teams through a consideration of Learning Style Flexibility. Building on Herrman’s Whole Brain theory, they consider the potential of learning style flexibility to enhance virtual team learning. Du Toit and van Petegem not only present a framework for developing learner’s full potentials through such methods as action learning, but provide concrete strategies for facilitators’ use in actively facilitating e-learning through the development of team roles and social skills.

In Chapter III, Robert Zheng of Temple University in Philadelphia brings an interdisciplinary perspective to his consideration of WebQuests in e-learning. He discusses four constructs critical to WebQuests: constructivist problem-solving, social interaction, motivation, and scaffolding in e-learning. Zheng tests these constructs using both quantitative and qualitative methods. His findings identify concepts underlying virtual learning, and he draws on his research to suggest strategies for improving the effectiveness of virtual team design.

The final chapter in this section takes a theoretical approach to virtual team effectiveness. Pnina Shachaf and Noriko Hara of Indiana University in Bloomington, Indiana, provide an ecological theoretical framework of virtual learning environments that accounts for the factors of team boundaries management, technology use, and external environment and properties. Drawing upon both theoretical and empirical research, their study provides teachers with tools for managing virtual team effectiveness.

Section II: Strategies for Effective Teaching and Learning in Virtual Teams

Educators interested in improving teaching and learning using virtual teams are faced with significant issues that go beyond work in virtual teams to the broader issues of learning. Instructors must deal with issues ranging from ensuring students’ mastery of conceptual, analytical, and theoretical knowledge to developing students’ ability and comfort with the use of technologies. They face the problem of engaging students in higher order learning, and of maximizing the potential benefits of interaction and collaboration between virtual team mem-
The chapters in this section address these issues, focusing on strategies for teaching and learning in virtual teams.

In Chapter V, Rashmi Assudani of Xavier University in Cincinnati, discusses e-learning in management education. Using an ethnographic study of a Web-based graduate course, she explores the circumstances that encourage learning in virtual teams. The practical implications of Assudani’s study for teachers and learners include the importance of developing familiarity, building community as a means of creating successful outcomes, and developing social and technological competencies among learners.

Virtual study groups are the subject of Chapter VI, by Gregory B. Northcroft of the University of Illinois, Terri L. Griffith of Santa Clara University in California, and Mark A. Fuller of Washington State University, who discuss the potentials and benefits of virtual study groups. Drawing on their own experiences with virtual study groups composed of “working adults” at a large university, Northcroft, Griffith, and Fuller provide some strategies for effective design, training, and management of virtual study groups.

In Chapter VII, Kara L. Orvis of the U. S. Army Research Institute and Andrea Lassiter of Minnesota State University in Mankato consider the role of the instructor in identifying and directing learner-learner relationships in computer supported collaborative learning environments. Orvis and Lassiter identify potential problems (motivational, cognitive, and affective) for learners, and make clear and concrete recommendations for instructors to increase their effectiveness in facilitating learner-learner processes.

For teaching and learning in virtual teams to be academically legitimate, instructors must incorporate replicable and accurate assessment tools. In Chapter VIII, Patricia J. O’Connor of Queens College, City University of New York, and Susan H. Godar of William Paterson University, New Jersey address the assessment of virtual teams for the purpose of maximizing student learning. Moving from an explication of the concepts and strategies of outcomes assessment, they present specific examples of assessment tools and a “blueprint” for faculty to use in assessing virtual teams.

Section III: Teams in Action: International Collaboration

To educators, one of the most exciting potential uses of the Internet can be to enable students from different countries to exchange information and come to know one another and each another’s cultures. In this section, authors address global issues in international collaborations. They present effective models of students who work in international virtual teams to learn both strategies
and tactics for presenting themselves, and to become successful cross-cultural communicators.

In Chapter IX, Anne-Laure Fayard of INSEAD in France discusses her experiences of working with virtual student teams on two continents: Europe and Asia. Building on her own experience working with student virtual teams composed of members from France and Singapore engaged in collaborative consulting projects, Fayard discusses issues around course design and implementation. Using examples from her classes, she offers strategies for effective teaching and learning using international virtual teams.

In Chapter X, a second example of effective international student virtual team work is offered by Kathryn Hashimoto of the University of New Orleans in Louisiana and Jean-marc Lehu of Panthéon Sorbonne Université in Paris. They discuss their experiences with a well developed and several-year-old Student International Collaboration Project (SICP). The SICP is a problem-solving project where students work with each other and with faculty mentors to provide lessons in virtual teams’ problem solving, communication skills, team management, and cross-cultural communication. Hashimoto and Lehu draw upon their own experiences with, and experiences of, past projects within SICP to offer a guide for teachers in initiating and effectively managing similar projects. Readers interested in issues of international collaboration among student virtual teams should also re-visit Chapter I, where Boehm and Aniola-Jedrzejek discuss their work with several different virtual teams composed of Polish and American students.

Section IV: Teams and Technology

By their very nature, virtual teams are reliant on technological tools. In the 21st century a wide range of technologies exist to facilitate the functioning of virtual teams. Not only can virtual teams in higher education routinely access course management software at their institutions of learning, but they can also utilize commercial freeware, commercial software and hardware, and are constantly exposed to the potential of emerging new technologies. The two chapters in this section provide different perspectives on the role and place of technological tools in virtual teams.

In Chapter XI, Karen Rohrbauck Stout of Western Washington University in Bellingham applies an analysis of tools as cultural artifacts to the understanding of learning in virtual teams. She uses Wartofsky’s framework of primary, secondary, and tertiary tools to provide a typology of tools used in distance learning, and analyzes technological tools in terms of virtual team cognition.
and interaction. Stout’s work offers a framework for considering the value of different technological tools for teaching and learning.

In Chapter XII, Stephen Rains and Craig R. Scott of the University of Texas at Austin develop the theme of technology in virtual teams, moving from the theoretical to the applied in a comprehensive examination of the range of technological tools available to, and used by, virtual teams. Drawing on examples from their own courses, they consider the importance of technology-based training and address practical implications and lessons for student team members.

Sharmila Pixy Ferris  
Susan H. Godar  
June 2005

References