# ASSESSMENT SYSTEM FOR ASSESSING KNOWLEDGE SHARING AMONG SUBJECT EXPERTS IN SECONDARY SCHOOL

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# ASSESSMENT SYSTEM FOR ASSESSING KNOWLEDGE SHARING AMONG SUBJECT EXPERTS IN SECONDARY SCHOOL

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# ABSTRACT

*During the epoch of knowledge-based economy and knowledge management, teachers must learn in order to improve professional development. The success of knowledge management initiatives depends on knowledge sharing. The sharing of teaching-related knowledge may help teachers solve a variety of problems that they face, and the appropriate use of online knowledge-sharing activities is expected to assist teachers' knowledge sharing.*

*Since studies related to educational knowledge sharing are rare, knowledge sharing behavior may be different between organization types In order to promote knowledge sharing among subject experts within educational groups in secondary school; this study was implemented electronic assessment system to evaluate a knowledge sharing among teachers, which is helpful school organization's to develop knowledge and cultures.*

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# CHAPTER ONE

# INTRODUCTION

## 1.1 BACKGROUND

Knowledge is a critical managerial resource that provides a sustainable competitive advantage in a dynamic economy and competitive (Foss & Pedersen, 2002). It is necessary to gain a competitive advantage but insufficient for organizations to rely on staffing and training systems that focus on selecting employees who have specific knowledge, abilities, skills, or competencies or helping employees acquire them (Brown & Duguid, 1991). Organizations are also considering how to transfer knowledge and expertise from specialists who have it to novices who need to know (Hinds, Patterson & Pfeffer, 2001). Organizations need to more effectively exploit knowledge and emphasize based resources that already exist within the organization (Damodaran & Olphert, 2000).

Knowledge sharing is a process whereby a resource is given by one part and received by another and for sharing to occur; there must be exchange, it is the basically means through which employees can supply to knowledge application, innovation, and ultimately the competitive

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# REFERENCES


Al Shehri, M. (2004). Current issues in medical education. *West African Journal of Medicine, 22*(4), 329.

AL-Smadi, M., & Gütl, C. (2008). Past, Present and Future of e-Assessment-Towards a Flexible e-Assessment System. *Proceeding of ICL2008, Villach, Austria.*

Bangor, A., Kortum, P. T., & Miller, J. T. (2008). An empirical evaluation of the system usability scale. *International Journal of Human-Computer Interaction, 24*(6), 574-594.

Barab, S., MaKinster, J., Moore, J., & Cunningham, D. (2001). Designing and building an on-line community: The struggle to support sociability in the inquiry learning forum. *Educational Technology Research and Development, 49*(4), 71-96.

Barak, M., & Rafaeli, S. (2004). On-line question-posing and peer-assessment as means for web-based knowledge sharing in learning. *International Journal of Human-Computer Studies, 61*(1), 84-103.

Barker, T., & Lee, S. (2007). *The verification of identity in online assessment: A comparison of methods.* Paper presented at the Proceedings of 11th Computer Aided Assessment Conference, Loughborough.

Bennett, R. (2002). Inexorable and inevitable: The continuing story of technology and assessment. *Journal of Technology, Learning, and Assessment, 1*(1), 3-23.

Bock, G., Zmud, R., Kim, Y., & Lee, J. (2005). Behavioral intention formation in knowledge sharing: Examining the roles of extrinsic motivators, social-psychological forces, and organizational climate. *Mis Quarterly, 29*(1), 87-111.

Boehm, B. (2002). Get ready for agile methods, with care. *COMPUTER*, 64-69.

Boehm, B., & Hansen, W. (2001). The spiral model as a tool for evolutionary acquisition. *CrossTalk, 14*(5), 4–11.

Boehm, B., & Usc, B. (2007). Anchoring the software process. *Software engineering: Barry W. Boehm's lifetime contributions to software development, management, and research, 13*(4), 367.

Boehm, B., Egyed, A., Kwan, J., Port, D., Shah, A., & Madachy, R. (2002). Using the winwin spiral model: A case study. *Computer, 31*(7), 33-44.

Bransford, J. (2000). *How people learn: Brain, mind, experience, and school*: National Academies Press.

Brown, J., & Duguid, P. (1991). Organizational learning and communities-of-practice: Toward a unified view of working, learning, and innovation. *Organization science, 2*(1), 40-57.

Bull, J., & McKenna, C. (2004). *Blueprint for computer-assisted assessment*: Routledge.

Buzzetto-More, N., & Alade, A. (2006). Best practices in e-assessment. *Journal of Information Technology Education, 5*(1), 251-269.

Cabrera, A., Collins, W., & Salgado, J. (2006). Determinants of individual engagement in knowledge sharing. *The International Journal of Human Resource Management, 17*(2), 245-264.

Cabrera, E., & Cabrera, A. (2005). Fostering knowledge sharing through people management practices. *The International Journal of Human Resource Management, 16*(5), 720-735.

Carroll, J., Choo, C., Dunlap, D., Isenhour, P., Kerr, S., MacLean, A., et al. (2003). Knowledge management support for teachers. *Educational Technology Research and Development, 51*(4), 42-64.

Charman, D., & Elmes, A. (1998). Computer Based Assessment: A guide to good practice. *Volume I, University of Playmouth.*

Cioch, F., Brabbs, J., & Kanter, S. (2002). Using the spiral model to assess, select and integrate software development tools *Assessment of Quality Software Development Tools,* (pp. 14-28).

Cross, R., & Baird, L. (2000). Technology is not enough: improving performance by building organizational memory. *IEEE Engineering Management Review, 28*(4), 8-16.

Cummings, J. (2004). Work groups, structural diversity, and knowledge sharing in a global organization. *Management Science, 50*(3), 352-364.

Dall'Acqua, L. (2010). *Cognitive Tutoring based on Intelligent Decision Support in the PENTHA Instructional Design Model.* Paper presented at the AIP Conference Proceedings Special Edition of the World Congress on Engineering and Computer Science-2009, San Francisco, California. (pp.261-275).

Damodaran, L., & Olphert, W. (2000). Barriers and facilitators to the use of knowledge management systems. *Behaviour & Information Technology, 19*(6), 405-413.

Davenport, T., & Prusak, L. (2000). *Working knowledge: How organizations manage what they know*: Harvard Business Press.

Dhir, K. (2005). Content access, and the use of data for student learning: The case of Berry College. *K. Martell & T. Calderon, Assessment of student learning in business schools: Best practices each step of the way, 1*(2), 167-183.

Dietel, R., Herman, J., & Knuth, R. (1991). What does research say about assessment. *North Central Regional Educational Laboratory, Oak Brook.*

Dochy, F., & McDowell, L. (1997). Introduction: Assessment as a Tool for Learning. *Studies in Educational Evaluation, 23*(4), 279-298.

Elliot, B. (2008). Assessment 2.0: Modernising assessment in the age of web 2.0. *Scottish Qualifications Authority, Retrieved on, 28.*

Eriksson, I. V., & Dickson, G. W. (2000). *Knowledge sharing in high technology companies.* Paper presented at the Americas Conference on Information Systems (AMCIS). Relative December 25, 2010 from: http://aisel.aisnet.org/cgi/viewcontent.cgi?article=1706&context=amcis2000

Farance, F. (2000). Draft standard for learning technology. Public and private information (PAPI) for learners (PAPI Learner): Version 6.0. Tech. Rep. Institute of Electrical and Electronics Engineers, Inc.

Finlay, L. (2006). Mapping methodology. *Qualitative research for allied health professionals: Challenging choices. Chichester, Sussex: John Wiley.*

Fischer, F., & Mandl, H. (2005). Knowledge convergence in computer-supported collaborative learning: The role of external representation tools. *Journal of the Learning Sciences, 14*(3), 405-441.

Foss, N., & Pedersen, T. (2002). Transferring knowledge in MNCs:: The role of sources of subsidiary knowledge and organizational context. *Journal of International Management, 8*(1), 49-67.

Gütl, C. (2007). Moving towards a Fully-Automatic Knowledge Assessment Tool. *iJET International Journal of Emerging Technologies in Learning, to be published.* Relative December 18, 2010 from: http://info.iicm.edu/home/cguetl/publications/2008/Guetl%202008%20-%20IJET.pdf.

Haken, M. (2006). *Closing the loop-learning from assessment.* Paper presented at the Presentation made at the University of Maryland Eastern Shore Assessment Workshop, Princess Anne: MD.

Harich, K., Fraser, L., & Norby, J. (2005). Taking the time to do it right. *K. Martell & T. Calderon, Assessment of student learning in business schools: Best practices each step of the way, 1*(2), 119-137.

Hendriks, P. (1999). Why share knowledge? The influence of ICT on the motivation for knowledge sharing. *Knowledge and process management, 6*(2), 91-100.

Hinds, P., Patterson, M., & Pfeffer, J. (2001). Bothered by abstraction: The effect of expertise on knowledge transfer and subsequent novice performance. *Journal of Applied Psychology, 86*(6), 1232-1243.

Hou, H., Sung, Y., & Chang, K. (2009). Exploring the behavioral patterns of an online knowledge-sharing discussion activity among teachers with problem-solving strategy. *Teaching and Teacher Education, 25*(1), 101-108.

Hsu, M., Ju, T., Yen, C., & Chang, C. (2007). Knowledge sharing behavior in virtual communities: The relationship between trust, self-efficacy, and outcome expectations. *International Journal of Human-Computer Studies, 65*(2), 153-169.

Hsu, S. (2004). Using case discussion on the web to develop student teacher problem solving skills. *Teaching and Teacher Education, 20*(7), 681-692.

Jackson, S., Chuang, C., Harden, E., & Jiang, Y. (2006). Toward developing human resource management systems for knowledge-intensive teamwork. *Research in Personnel and Human Resources Management, 25*, 27-70.

Khriss, I., Elkoutbi, M., & Keller, R. K. (2004). Automating the synthesis of UML statechart diagrams from multiple collaboration diagrams. *The Unified Modeling Language.«UML»'98: Beyond the Notation*, 514-514.

Klassen, J. (2001). *Pedagogical Support for the use of Information technology in teaching.* Paper presented at the Conference Proceedings for Informing Science, Krakow, Poland.

Kruchten, P. (2004). *The rational unified process: an introduction.* Canada: Addison-Wesley Professional.

Li, X., Montazemi, A., & Yuan, Y. (2006). Agent-based buddy-finding methodology for knowledge sharing. *Information & Management, 43*(3), 283-296.

Ma, W., & Yuen, A. (2010). Understanding online knowledge sharing: An interpersonal relationship perspective. *Computers & Education, 56*(1), 210-219.

Markopoulos, P., & Bekker, M. (2003). On the assessment of usability testing methods for children. *Interacting with Computers, 15*(2), 227-243.

Martell, K., & Calderon, T. (2005a). Assessment in business schools: What it is, where we are, and where we need to go now. *Assessment of student learning in business schools: Best practices each step of the way, 1*(1), 1-26.

Martell, K., & Calderon, T. (2005b). Assessment of student learning in business schools: What it is, where we are, and where we need to go next. *K. Martell & T. Calderon, Assessment of student learning in business schools: Best practices each step of the way, 1*(1), 1-22.

Mazzolini, M., & Maddison, S. (2007). When to jump in: The role of the instructor in online discussion forums. *Computers & Education, 49*(2), 193-213.

Mesmer-Magnus, J., & DeChurch, L. (2009). Information sharing and team performance: A meta-analysis. *Journal of Applied Psychology, 94*(2), 535-546.

Myers, G. (2008). *The art of software testing*: Wiley-India.

Orlich, D., Harder, R., Callahan, R., Trevisan, M., & Brown, A. (2009). *Teaching strategies: A guide to effective instruction*: Wadsworth Pub Co.

Palinscar, A., & Brown, A. (1984). Reciprocal teaching of comprehension-fostering and comprehension-monitoring activities. *Cognition and instruction, 1*(2), 117-175.

Prensky, M. (2001). Digital natives, digital immigrants Part 1. *On the horizon, 9*(5), 1-6.

Rafaeli, S., Barak, M., Dan-Gur, Y., & Toch, E. (2004). QSIA-a Web-based environment for learning, assessing and knowledge sharing in communities. *Computers & Education, 43*(3), 273-289.

Ras, E., Avram, G., Waterson, P., & Weibelzahl, S. (2005). Using weblogs for knowledge sharing and learning in information spaces. *Journal of Universal Computer Science, 11*(3), 394-409.

Reimann, P., & Zumbach, J. (2003). Supporting virtual learning teams with dynamic feedback. *The "Second Wave" of ICT in Education: from Facilitating Teaching and Learning to Engendering Education Reform*, 424-430.

Ruppel, C. P., & Harrington, S. J. (2001). Sharing knowledge through intranets: a study of organizational culture and intranet implementation. *IEEE Transactions on Professional Communication, 44*(1), 37-52.

Scarlat, R., Stanescu, L., Popescu, E., & Burdescu, D. (2010). *Case-Based Medical E-assessment System.* Paper presented at the Advanced Learning Technologies (ICALT), 2010 IEEE 10th International Conference. Sousse. pp. 158-162.

Siemens, G., & Tittenberger, P. (2009). *Handbook of emerging technologies for learning*. Manitoba, CA: University of Manitoba.

Snow-Gerono, J. (2005). Professional development in a culture of inquiry: PDS teachers identify the benefits of professional learning communities. *Teaching and Teacher Education, 21*(3), 241-256.

Szulanski, G., Cappetta, R., & Jensen, R. (2004). When and how trustworthiness matters: knowledge transfer and the moderating effect of casual ambiguity. *Organization science*, 600-613.

Tyack, D., & Cuban, L. (1995). *Tinkering toward utopia: A century of public school reform*: Harvard Univ Pr.

Vendlinski, T., & Stevens, R. (2002). Assessing student problem-solving skills with complex computer-based tasks. *Journal of Technology, Learning, and Assessment, 1*(3).

Wertsch, J., & Bivens, J. (1993). The social origins of individual mental functioning: Alternatives and perspectives. *The development and meaning of psychological distance*, 203-218.

Yamamichi, N., Ozeki, T., Yokochi, K., & Tanaka, T. (2002). *The evaluation of new software developing process based on a spiral modeling.* Paper presented at the Global Telecommunications Conference, London. *3*, 2007-2012.

Yang, C., & Chen, L. (2007). Can organizational knowledge capabilities affect knowledge sharing behavior? *Journal of Information Science, 33*(1), 95.

Zhao, J. (2010). School knowledge management framework and strategies: The new perspective on teacher professional development. *Computers in Human Behavior, 26*(2), 168-175.

Ziv, A., Ben-David, S., & Ziv, M. (2005). Simulation based medical education: an opportunity to learn from errors. *Medical teacher, 27*(3), 193-199.