

Online Learner Competencies: Results of a Worldwide Validation Study

Barbara Grabowski
Penn State University
United States
bgrabowski@psu.edu

Gila Kurtz
The Center for Academic Studies
Israel
gilaku@013net.net

Insung Jung
International Christian University
Japan
insung_jung@hotmail.com

Michael Beaudoin
University of New England
United States
mbeaudoin@une.edu

Katsuaki Suzuki
Kumamoto University
Japan
ksuzuki@KUMAMOTO-U.AC.JP

Abstract: Given the new learning landscapes afforded by technology, learning opportunities for students in formal settings, especially in online education, have become deeply enriched. As a result, specifying competencies for learning in this new online landscape should help students understand and take full advantage of these affordances for learning. Several researchers, therefore, argue that online learners should develop certain knowledge, experience, abilities and attitudes (or competencies) to gain the greatest benefit and achieve high performance from their online studies. From this research, they identified overt competencies related to successful online learning experiences such as learning strategies, time management and technology skills while others have emphasized internal or attitudinal competencies such as high motivation, a strong academic self-concept and self-discipline. While these scholars present certain competencies needed for successful online learning, they tend to fail to offer a full set of online learner competencies based on empirical evidence from global populations.

Experienced professionals associated with the International Board of Standards for Training, Performance and Instruction (Board hereafter) addressed this challenge and recently collected validation data on a set of online learner competencies. This paper presents the differing perceptions of respondents by role (online learners vs. instructors) and region (North America and Asia) with regard to the criticality of the three domains, 14 competencies and 89 performance criteria of effective online learners.

Introduction

Given the new learning landscapes afforded by technology, learning opportunities for students in formal settings, especially in online education, have become deeply enriched. Anderson (2004), Dede (2004), Moore and Kearsley (2012), and others show that the technology integration in education can expand interactivity, widen access to multimedia-rich learning resources, provide learner-centered, knowledge-centered, assessment-centered and community-centered environments, and be more responsiveness to individual needs. Online education in particular can offer more flexible, networked and extended virtual spaces for learning. As a result of this expanded complexity, specifying competencies for learning in this new online landscape should help students understand and take full advantage of these affordances for learning. This expanded landscape coupled with expanded online enrollments exceeding 100,000 annually speaks to the importance of identifying effective online learning skills sets (Beaudoin, 2010).

Several researchers, therefore, argue that online learners should develop certain knowledge, experience, abilities and attitudes (or competencies) to gain the greatest benefit from their online studies and achieve high performance. Mandernach, Donnelly, and Dailey-Hebert (2006) identified time management, computer literacy and comprehension and writing skills as important competencies for successful online learning while others (Dabbagh, 2007; Golladay, Prybutok, & Huff, 2000) indicated learners' internal factors such as high motivation, a strong academic self-concept, and self-discipline as major attributes of successful online learners. Hong and Jung (2011) discovered overall management skills and cognitive and meta-cognitive skills as most important for the success in online learning. While these studies present certain competencies in successful online learners, they lack empirical evidence from global populations.

De la Teja and Spannaus (2008) and Beaudoin (2010) also argue that advice for online learners may not be based on systematic data collected from online learners themselves who could give validity to that advice. The Directors of the International Board of Standards for Training, Performance and Instruction engaged in a multiyear research effort to gather this empirical evidence from global populations of learners, instructors and others involved in providing formal online learning experiences.

Competency Development and Research

The Board identified critical online learner competencies by following a rigorous research process, consisting of three main phases: Specifying the Competencies, Validation of the Competencies, and Finalizing the Competencies. In this development, De la Teja and Spannaus (2008) also advise differentiating high performing and low performing learners based on competence for success. Putting competencies on the face of what constitutes a successful learner should enable both instructors and students to promote these competencies in how they teach or learn online. This implies that the Board should arrive at a definition of a competent learner, not simply a successful one.

To develop and validate competencies of a successful and competent online learner, the Board follows the definitions of domain, competency and performance statement adopted by ibstpi. A competency is defined as the knowledge, skill, attitude or characteristic to effectively perform a task or role. A performance statement indicates how a particular competency is demonstrated. Domain is a cluster of related competencies.

Phase 1: Specifying the Competencies

In the first phase, the Board developed the competencies for online learners through an extensive refinement of the online learner role, review of the literature, board expertise and experience, online and face-to-face discussions, and scrutiny of wording to meet cultural and contextual usage. After extensive debate, discussion, and review of the literature, the Board constrained the competencies of online learners to those related to the rich and unique affordances of formal online learning settings.

Three domains captured these competency areas. The *personal domain* includes those competencies that merge internal with external factors affecting learners' online learning behaviors,

including volition and control over one's learning environment. The *learning domain* includes factors related to skillful knowledge construction in an online environment, and the *interactive domain* involves competencies related to engaging, interactive and collaborative interactions. The Board then specified 14 main competencies from the three clusters. These competencies were further specified by 89 performance statements that demonstrate skill in the competencies.

The final list of competencies identified in this phase was scrutinized by all directors, and a panel of experts consisting of learners, instructors, and instructional designers. Finally, the competencies were translated from English into Korean, Japanese, Chinese, Hebrew, and Portuguese.

Phase 2: Validating the Competencies

In the second phase, the research team distributed an online validation survey to an internationally targeted audience using a snowball strategy to gather perceptions of importance of each domain, competency and performance statement to successful online learning. Participants were asked to rate each statement on a scale of 1 to 5, with 1 meaning None, 2 Low, 3 Moderate, 4 High, and 5 Very High importance. The data were gathered over an 11 month period. The 702 respondents from 10 regions of the world representing a variety of organizational settings, job focus, gender, age and level of experience participated in the survey. These data were then analyzed for importance to successful online learning, and scrutinized for demographic nuances. This paper reports on the results of this phase.

Phase 3: Finalizing the Competencies

In the final phase, the Board will review the analysis of the validation survey results to develop a revised set of competencies and performance statements to be submitted and approved by the full ibstpi Board and the expert advisory group.

Research Questions

The analysis presented in this paper is based on the results from phases 1 and 2, to answer the following research questions:

1. What is the rank ordering of the competencies by domain?
2. How does the rank ordering of the competencies differ based on perceptions of online learners and online learning instructors?
3. How does the rank ordering of competencies differ based on perceptions of importance by region?

Results

High reliability coefficients speak to the quality of the constructed set of competencies ($> .95$ Cronbach Alpha for each domain; ranging from .80 to .92 for competencies). Rank ordering and criticality ratings for these competencies and performance statements are discussed in terms of implications for online learning. Differences with regard to on line learner and instructor and two major regions of the world as represented by our respondents offered important opportunities to analyze perceptions of criticality across two different roles in online learning environments, and two major regions of the world. Finally, recommendations are drawn for engaging in a successful online learning experience.

Overall Rank Ordering

In the personal domain, the most critical competency, not surprisingly, was to manage time effectively, whereas managing the challenges of online learning was the least critical, although it must be noted that it was rated as 4.17, high importance also. See Table 1.

Competency	Mean	SD	N
4. Manage time effectively	4.40	0.83	637
1. Set realistic expectations for online study	4.31	0.83	682
5. Comply with academic, ethical and legal standards	4.29	0.85	640
2. Maintain determination to achieve learning goals	4.27	0.79	627
6. Use technology proficiently	4.24	0.82	635
3. Manage the challenges of online learning	4.17	0.81	619

Table 1. Personal Domain

The *learning* domain showed a similar spread with *being an active learner* as the most critical, and surprisingly, being a resourceful learner as the least. The criticality ratings of the performance statements explain some of these differences. See Table 2.

Competency	Mean	SD	N
1. Be an Active learner	4.40	0.78	664
5. Apply learning	4.29	0.79	621
3. Be a reflective learner	4.28	0.82	635
4. Be a self-monitoring learner	4.23	0.82	643
2. Be a resourceful learner	4.19	0.79	640

Table 2. Learning Domain

The *interaction* domain puts effective communication as most important and both productive and collaborative communication second with minimal difference. See Table 3.

Competency	Mean	SD	N
1. Engage in effective online communication	4.23	0.83	647
2. Engage in productive online interaction	4.14	0.86	628
3. Engage in collaborative online communication to build knowledge	4.13	0.83	629

Table 3. Interaction Domain

As a result of the validation data, overall, it appears that most respondents agree that these 14 competencies have high importance to successful online learning. It is important to recall that the directors selected competencies specifically for the role of an online learner in a formal setting.

Perceptions of Online Learners vs Instructors

It is natural to speculate that instructors are aware of what skills are required for successful online learning, but it may be that learners use skills that are “undetected” by instructors (De la Teja and Spannaus, 2008, Beaudoin, 2010). To examine this phenomenon, and in response to the second research question regarding differences in perceptions of online learner competency importance based on the role of the respondent in the online learning environment, an independent two-sample t-test was used to compare responses of learners with those of instructors. Of the 702 respondents, 63% were learners and 37% were instructors.

The results of the t-test revealed significant differences between perceptions of online learners and instructors for the following competencies:

- Competency 7: Be an Active learner – ($T(514) = 2.00, p < .046$)
 - Mean (Instructor) = 4.54
 - Mean (Learner) = 4.36
- Apply learning – ($T(484) = 2.33, p < .02$)
 - Mean (Instructor) = 4.56
 - Mean (Learner) = 4.24
- Competency 12 - Engage in effective online communication – ($T(492) = 2.35, p < .019$)
 - Mean (Instructor) = 4.54
 - Mean (Learner) = 4.21
- Competency 14: Engage in collaborative online communication to build knowledge – ($T(609) = 2.43, p < .016$)
 - Mean (Instructor) = 4.30
 - Mean (Learner) = 4.07

In each case, the instructors and learners validated the importance of this list of competencies. However, the instructors rated the importance significantly higher than the learners for these four competencies. A possible explanation may be that instructors, many of whom also consider themselves as instructional designers, may be more aware of more contemporary learning theory, and the importance of active, engaged and collaborative learning strategies. They may also design their online instruction to include more collaborative experiences to build knowledge. It could also be that online learners perceive well-structured and clearly presented content is more critical for the success of their online learning than active engagement in interactive communication processes whereas the instructors consider the learners' commitment in online learning as more important.

Perceptions of Online Learner Competencies by Region

Researchers such as Rogers (1995) argued that taking into consideration cultural beliefs, values and styles of learning which may create unexpected online cultural collisions. Gunawardena and LaPointe (2007) suggested social presence, conflict resolution, group process, participation, help-seeking behavior as factors to examine. Therefore, in response to the third research question, regarding differences in perceptions of online learner competency importance based on the two dominant regions responding to our validation study, an independent samples t-test was run comparing perceptions between these two regions. The majority of respondents were from either North America (45%) and from Asia (42%).

We found that North American respondents differed from the Asian respondents by the following competencies, with the North American respondents rating each significantly higher.

- Competency 3: Manage the challenges of online learning – ($T(522) = 4.36, p < .000$)
 - Mean (North American) = 4.31
 - Mean (Asian) = 4.02
- Competency 4: Manage time effectively – ($T(568) = 4.36, p < .006$)
 - Mean (North American) = 4.49
 - Mean (Asian) = 4.30
- Competency 5: Comply with academic, ethical and legal standards – ($T(574) = 4.36, p < .000$)
 - Mean (North American) = 4.45
 - Mean (Asian) = 4.10
- Competency 6: Use technology proficiently – ($T(568) = 5.72, p < .000$)
 - Mean (North American) = 4.41
 - Mean (Asian) = 4.04
- Competency 13: Engage in productive online interaction – ($T(571) = 4.27, p < .000$)
 - Mean (North American) = 4.31
 - Mean (Asian) = 4.02

As with the differences between instructors and learners, the competencies were validated as important by both regions. All competencies were perceived as very important.

When considering significant differences in perceived importance, Asian respondents may have seen Competency 3 and 6 as less important compared with their counterparts in North America who showed higher level of e-learning readiness. This may be that online learners with extensive experience in e-learning have learned that technology proficiencies are the basis of all successful online learning activities. This explanation is supported by comparing the experience levels of those from both regions. From North America, 70% of the respondents have experienced more than 11 courses online, and 28% experienced 1 to 5 courses online; whereas 39.4% of respondents from Asia experienced more than 11 courses online, and 49% experienced 1 to 5.

The significant difference between regional perceptions of managing time effectively is a little more speculative, and surprising, as it has been a factor noted in several previous studies. Examining the relative importance, however, among the five competencies, still places it as the highest important competency within the region, so that there may be other factors at work here, including tendency toward more positive overall response. This factor needs to be examined further.

Difference in Competency 5 may be explained by the findings of several other studies noting that cultural norms play a role in ethics related to ICT use. In a study conducted in a bilingual university in Japan, Dryden (1999) found that Japanese students and academics tended to view plagiarism as 'improper', but 'no big deal' when compared to Westerners. Similarly, Rinnert and Kobayashi (2005) and Jung (2009) revealed that Japanese college students lacked any understanding of the need to fully and correctly cite sources compared with the American college students and showed more tolerance toward plagiarism and copyright violations. Milberg, Smith, and Burke (2000), in their cross-cultural study of privacy concerns within 20 countries, found that people in more individualistic cultures (like North America) are more concerned about privacy compared with those in more collective cultures (like Asian countries).

Different ratings in Competency 13 may be partly explained by significant cultural differences in Western and Asian ways of communicating and learning. In the high-context Asian e-learning contexts, both students and educators prefer online video-lectures, which retain elements of face-to-face teaching, over the more impersonal text on asynchronous online interaction forums; whereas in the low-context Western cultures, precise and logical word-based interactions are often more valued than online lectures by experts.

Other discussion related to cultural differences may be explained with further analysis of the performance statements.

Conclusions and Recommendations

The consistently perceived importance of the 14 competencies across role, that is, learner and instructor, and two geographical regions, Asia and North America, speaks well for the specified competencies as important for successful online learning experience in a formal setting. Therefore, we believe based on our data that success of e-learning not only depends on the instructors but also on the competencies of the learners and level of their engagement in the learning in the personal, learning and interaction domains.

We recommend that students be made aware of this list of 14 competencies along with the defining performance statements when they first enroll in a formal online setting, and be reminded of them as they continue to enroll. We also recommend that instructors use these competencies for successful learning by fostering and promoting these competencies in their learners by scaffolding those weak in particular competencies. Thus e-learning instructors need to develop e-learning competencies in the learners that will equip them for successful learning experience and high achievement in an extended learning environment. Results of this study offer valuable insights in the development of such competencies, and will be discussed further.

References

Anderson, T. (2004). Toward a theory of online learning. In T. Anderson & F. Elloumi (Eds.), *Theory and practice of online-education* (pp. 33-60). Canada: Athabasca University.

- M. Beaudoin. (2010). Experiences and Opinions of Online Learners- What Foster Successful Learning? In Y. Kats (Ed.), *Learning management system technologies and software solutions for online teaching: Tools and applications*. Farmington Hill, MI: Information Science Publishing.
- Dabbagh, N. (2007). The online learner: Characteristics and pedagogical implications. *Contemporary Issues in Technology and Teacher Education*, 7(3), 217–226. Retrieved from <http://www.citejournal.org/vol7/iss3/general/article1.cfm>
- Dede, C. (2004). Enabling distributed learning communities via emerging technologies. *THE Journal*, 32(2), 12–22.
- De la Teja, I., & Spannaus, T. W. (2008). New online learning technologies: new online learner competencies. Really? In J. Visser & M. Visser-Valfrey (Eds.), *Learners in a changing learning landscape: Reflections from a dialogue on new roles and expectations*. (pp. 187-211). Dordrecht, The Netherlands: Springer.
- Dryden, L.M. (1999). A distant mirror or through the looking glass? Plagiarism and intellectual property in Japanese education. In L. Buranen & A.M. Roy (Eds.), *Perspectives on plagiarism and intellectual property in a postmodern world*. (pp. 75–85). New York: State University of New York Press.
- Golladay, R., Prybutok, V., & Huff, R. (2000). Critical success factors for the online learner. *Journal of Computer Information Systems*, 40(4), 69–71.
- Gunawardena, C. and LaPointe, D. (2007). Cultural dynamics of online learning. In *Handbook of distance education* (2nd edition). M. Moore, ed.). Mahwah, NJ: Lawrence Erlbaum Associates, Publishers.
- Hong, S., & Jung, I. (2011). The distance learner competencies: A three-phased empirical approach. *Educational Technology Research and Development*, 59(1), 21-42.
- Jung, I.S. (2009 November). Ethical judgments and behaviors: Applying a multidimensional ethics scale to measuring ICT ethics of college students. *Computers & Education*, 53(3), 940-949
- Mandernach, B. J., Donnelly, E., & Dailey-Hebert, A. (2006). Learner attribute research juxtaposed with online instructor experience: Predictors of success in the accelerated, online classroom. *The Journal of Educators Online*, 3(2), 1–17. Retrieved from <http://www.thejeo.com/Volume3Number2/MandernachFinal.pdf>
- Milberg, Sandra J., H. Jeff Smith, H.J., and Sandra J. Burke, S.J. (2000). Information privacy: Corporate management and national recognition. *Organizational Science*, 11(1), 35-57.
- Moore, M. G. & Kearsley, G. (2012). *Distance Education: A systems view of online learning*. Belmont: Wadsworth, Gengage Learning.
- Rinnert, C., & Kobayashi, H. (2005). Borrowing words and ideas: Insights from Japanese L1 writers. *Journal of Asian Pacific Communications*, 15 (1), 31-56.
- Rogers, E. (1995). *Diffusion of innovations* (4th ed.). New York: The Free Press.