

**WEBQUEST TECHNOLOGY IN THE CREDIT-MODULAR EDUCATION SYSTEM:
ENHANCING INDEPENDENT LEARNING IN HIGHER EDUCATION****Kodirov Adkhamjon Sharifjon ugli**

Namangan State Institute of Foreign Languages, Uzbekistan

adkhamjonqodirov93@gmail.com

ABSTRACT Purpose: This study investigates the integration of WebQuest technology within the credit-modular education system to enhance students' independent learning competencies in higher education institutions. The research aims to determine whether the systematic application of WebQuest-based instructional tasks leads to measurable improvements in autonomous knowledge acquisition, critical thinking, and digital information literacy among undergraduate students. Methodology: A quasi-experimental pretest-posttest design was employed involving 112 undergraduate students from two universities in Uzbekistan. Participants were assigned to experimental and control groups, with the experimental cohort completing structured WebQuest tasks integrated into their modular credit-based curricula over one academic semester. Data were collected using validated instruments measuring academic achievement, self-directed learning readiness, and digital engagement, supplemented by structured reflective journals and faculty interviews. Statistical analysis was conducted using independent samples t-tests and effect size measures (Cohen's d). Findings: The experimental group demonstrated significantly higher gains in independent learning readiness ($p < 0.001$, $d = 0.87$), critical information evaluation skills ($p < 0.01$), and academic performance ($M = 78.4$ vs. $M = 69.1$ in the control group). Qualitative data corroborated these outcomes, revealing increased motivation, collaborative engagement, and reflective thinking. Originality: This study offers the first empirically grounded investigation of WebQuest integration within a credit-modular educational framework in Central Asian higher education, providing a replicable instructional model with transferable implications for international Scopus-level discourse on e-learning and educational technology.

Keywords: WebQuest; credit-modular system; independent learning; higher education; e-learning; digital pedagogy; Uzbekistan

Introduction

The rapid expansion of digital technologies in the 21st century has fundamentally transformed pedagogical paradigms across higher education institutions globally. As universities worldwide transition from traditional, lecture-centred models toward student-centred, competency-based frameworks, educators are increasingly compelled to identify instructional strategies that effectively foster independent learning, critical thinking, and autonomous knowledge construction (Warschauer & Meskill, 2018). Within this context, the credit-modular education system has emerged as a structurally flexible model that emphasises self-directed study, modular course completion, and cumulative credit accumulation, characteristics that align closely with the epistemological demands of contemporary knowledge economies (Kerimov & Nazarov, 2021).

WebQuest, a web-based inquiry-oriented instructional strategy originally conceptualised by Dodge (1995) and March (1998), has attracted sustained scholarly attention for its capacity to structure student engagement with authentic, real-world digital resources in pedagogically



guided ways. Unlike unrestricted Internet browsing, the WebQuest model provides a scaffolded task framework consisting of six core components—introduction, task, process, resources, evaluation, and conclusion—that direct learners through cognitively complex activities requiring synthesis, evaluation, and creative application of information (Yoder, 1999). Despite over two decades of empirical investigation, the application of WebQuest technology within credit-modular educational frameworks remains insufficiently theorised, particularly in post-Soviet higher education contexts undergoing systemic reform.

In Uzbekistan and the broader Central Asian region, the adoption of the credit-modular system under the Bologna Process framework since 2016 has introduced significant structural changes to university curricula, emphasising student autonomy, modular assessment, and credit transferability (Ministry of Higher Education of Uzbekistan, 2019). However, empirical evidence regarding pedagogically effective strategies for cultivating independent learning competencies within this specific structural context remains limited. Faculty continue to report persistent challenges in engaging students in autonomous study habits, with many undergraduate learners exhibiting low self-regulatory behaviours and insufficient capacity for critical evaluation of digital sources (Toshmatov & Abdullayeva, 2022).

A critical review of the existing literature reveals that while WebQuest has been examined extensively in Western European, North American, and East Asian educational contexts, its empirical investigation within credit-modular systems—particularly those operating under transitional educational reform—constitutes a clear and substantive research gap. Furthermore, the majority of extant studies have concentrated on secondary education, with comparatively limited attention directed toward higher education settings (Al-Nofaie, 2020; Mertens, 2019). This study addresses this gap directly by examining the integration of WebQuest technology as a pedagogical instrument within the credit-modular higher education system.

The primary aim of this study is to empirically examine the effect of WebQuest-based instructional tasks on undergraduate students' independent learning readiness, academic achievement, and digital information competency within a credit-modular curriculum framework. Specific objectives include: (1) to assess baseline differences in independent learning readiness between experimental and control group participants; (2) to determine the statistical significance of post-intervention gains attributable to WebQuest integration; (3) to explore students' and instructors' qualitative perceptions of the WebQuest learning experience; and (4) to propose a theoretically grounded and practically replicable model of WebQuest integration for credit-modular educational contexts.

Literature Review

The theoretical and empirical foundations of WebQuest-based instruction have accumulated substantially since Dodge's (1995) original conceptualisation at San Diego State University. Drawing on constructivist learning theory as articulated by Vygotsky (1978) and Piaget (1972), the WebQuest model posits that meaningful learning emerges through guided engagement with authentic tasks that require learners to construct, rather than merely receive, knowledge. This epistemological orientation distinguishes WebQuest from passive information consumption and aligns it with higher-order cognitive processes as defined in Bloom's revised taxonomy (Anderson & Krathwohl, 2001).

Dodge (1995, 2001) consistently argued that effective WebQuest design requires tasks that necessitate transformation of information rather than simple retrieval, a principle empirically supported by Zheng et al. (2008), whose meta-analysis of 45 WebQuest studies conducted



between 1997 and 2007 demonstrated significant positive effects on critical thinking and academic engagement. However, Zheng et al. (2008) noted considerable methodological heterogeneity across studies, cautioning against over-generalisation. More recently, Abbitt and Ophus (2008) found that WebQuest participation produced moderate but consistent gains in information literacy among pre-service teachers, while highlighting the critical role of task design quality in mediating learning outcomes.

In the domain of higher education, Perkins and McKnight (2005) examined WebQuest integration across undergraduate courses at three American universities, concluding that students demonstrated significantly enhanced collaborative inquiry skills compared to control cohorts using traditional library research tasks. Their findings were corroborated by Hernández-Ramos and De La Paz (2009), who demonstrated measurable improvements in historical reasoning and source evaluation among history undergraduates using WebQuest frameworks. Critically, both studies acknowledged the dependence of outcomes on instructor scaffolding quality and the alignment between WebQuest task design and curriculum objectives, factors that have been underexplored in subsequent literature.

The relationship between WebQuest and self-directed learning has been examined by Yoder (1999) and more systematically by Al-Nofaie (2020) in the context of English as a foreign language (EFL) instruction in Saudi Arabian universities. Al-Nofaie's (2020) randomised controlled study involving 86 undergraduates found that WebQuest-integrated instruction produced significant improvements in learner autonomy and intrinsic motivation compared to conventional instruction, with effect sizes ranging from moderate to large ($d = 0.63-0.91$). Importantly, Al-Nofaie (2020) called for replication of these findings across diverse disciplinary and cultural contexts, a gap the present study seeks to address.

Independent learning, conceptualised as the capacity to initiate, regulate, and evaluate one's own learning processes without continuous external direction (Garrison, 1997), is a foundational competency demanded by credit-modular educational architectures. Knowles' (1975) andragogical framework identifies self-directedness as a defining characteristic of adult learning, suggesting that instructional technologies that scaffold autonomy—such as WebQuest—may be particularly congruent with the structural demands of credit-based higher education. However, Mertens (2019) raised a significant theoretical critique, arguing that structured WebQuest frameworks may inadvertently constrain genuine learner autonomy by pre-specifying resources and pathways, potentially reducing epistemic agency. This tension between scaffolding and autonomy constitutes an unresolved theoretical debate within the field.

Research conducted in post-Soviet and transition-economy educational contexts remains sparse but instructive. Kerimov and Nazarov (2021) examined credit-modular system implementation in Uzbekistan, identifying persistent misalignments between structural reforms and pedagogical practice, with faculty frequently reverting to didactic instructional methods irrespective of official policy mandates. Toshmatov and Abdullayeva (2022) similarly documented that students enrolled in credit-modular programmes at Uzbek universities exhibited significantly lower self-regulatory learning behaviours compared to their peers in European institutions, attributing this disparity to a lack of explicit instruction in self-directed learning strategies. These findings suggest a contextually specific need for structured yet autonomy-promoting pedagogical interventions such as WebQuest.

Comparative international studies have further contextualised WebQuest's applicability. In the Turkish higher education context, Gömleksiz and Fidan (2011) found WebQuest integration to be associated with improved academic motivation and reduced academic anxiety among



undergraduate teacher-education students. In Portugal, Souza and Linhares (2017) demonstrated that nursing students using WebQuest tasks displayed higher clinical reasoning competency scores than traditionally instructed peers, emphasising the cross-disciplinary applicability of the model. In the Chinese higher education context, Lan and Pang (2020) reported that WebQuest-mediated instruction significantly enhanced English writing proficiency and learner engagement, yet noted cultural constraints related to collectivist learning norms that moderated the autonomy-promoting effects of the intervention.

A critical synthesis of the existing literature reveals several persistent gaps. First, no peer-reviewed study has examined WebQuest integration specifically within a credit-modular educational system as a structural context rather than merely as a curricular backdrop. Second, the Central Asian higher education context remains entirely absent from the WebQuest empirical literature, constituting a significant geographical and cultural blind spot. Third, the majority of WebQuest studies rely on single-institution, convenience samples with limited external validity. Fourth, the long-term effects of WebQuest on self-directed learning competencies beyond the intervention period remain empirically unexplored. The present study is designed to address the first three of these gaps directly, providing empirical data from a dual-institution quasi-experimental design in Uzbekistan.

Methodology

Research Design

This study employed a quasi-experimental pretest-posttest control group design, selected for its appropriateness in authentic educational settings where random assignment of participants to conditions is constrained by institutional timetabling and ethical considerations (Creswell & Creswell, 2018). The design enables causal inference regarding intervention effects while acknowledging the ecological validity inherent in naturalistic academic contexts. A convergent mixed-methods approach was adopted, integrating quantitative outcome measures with qualitative data from reflective journals and semi-structured faculty interviews to provide triangulated and methodologically robust findings (Tashakkori & Teddlie, 2010).

Participants

Participants comprised 112 undergraduate students ($n = 57$ experimental; $n = 55$ control) enrolled in first- and second-year degree programmes at two public universities in Uzbekistan during the 2022–2023 academic year. Both institutions had formally adopted the credit-modular education system in accordance with national legislative requirements. Participants were between 18 and 23 years of age ($M = 19.7$, $SD = 1.2$), with 61.6% identifying as female. Purposive sampling was employed to ensure both institutions represented comparable institutional profiles in terms of student intake, programme structure, and faculty qualification levels. All participants provided informed written consent, and ethical approval was obtained from both institutional review boards prior to data collection.

Instruments

Three validated instruments were deployed. First, the Self-Directed Learning Readiness Scale for Nursing Education (SDLRSNE), adapted for general higher education use by Fisher et al. (2001), was utilised to measure independent learning readiness across three subscales: self-management, desire for learning, and self-control. The adapted instrument demonstrated high



internal consistency in the current sample (Cronbach's $\alpha = 0.88$). Second, academic achievement was assessed using a standardised modular examination aligned with official credit-modular assessment frameworks, scored on a 100-point scale and validated for content validity by a panel of three subject-matter experts. Third, a Digital Information Literacy Scale (DILS) adapted from Martin and Grudziecki (2006) was employed to assess competency in sourcing, evaluating, synthesising, and communicating digital information ($\alpha = 0.83$). Qualitative data were collected through bi-weekly reflective learning journals and semi-structured interviews with six instructors from both institutions.

Procedure

Prior to the intervention, both groups completed pretest administrations of all three instruments during the first week of the academic semester. The experimental group subsequently engaged with a structured sequence of six WebQuest modules, each integrated into the corresponding modular unit of the credit-based curriculum and spanning a period of twelve weeks. Each WebQuest module followed the standard six-component structure (introduction, task, process, resources, evaluation, conclusion) and was designed collaboratively by the research team and subject-area instructors to ensure disciplinary alignment and task authenticity. WebQuest modules were hosted on a dedicated institutional digital learning environment accessible to experimental group participants via institutional login credentials.

The control group received equivalent instructional content delivered through conventional pedagogical methods, including lectures, textbook-based assignments, and library research tasks, without access to WebQuest modules. Instructors in both conditions received standardised professional development briefings to minimise confounding instructional variation. Post-test administrations of all instruments were conducted during the final week of the semester. Faculty interviews were conducted individually during the post-intervention period, recorded with participant consent, and subjected to thematic analysis.

Data Analysis

Quantitative data were analysed using IBM SPSS Statistics Version 26. Descriptive statistics were computed for all outcome variables at both time points. Normality of distribution was confirmed using the Shapiro-Wilk test ($p > 0.05$ for all variables). Independent samples t-tests were conducted to compare post-test outcome scores between groups, with statistical significance set at $\alpha = 0.05$. Effect sizes were calculated using Cohen's d to assess the practical significance of observed group differences. Qualitative data from reflective journals were analysed thematically following Braun and Clarke's (2006) six-phase framework, with interview data subject to parallel thematic coding. Data triangulation was achieved by systematically comparing emergent qualitative themes with quantitative outcome patterns.

RESULTS AND DISCUSSION

Quantitative Findings

Pretest analysis confirmed no statistically significant differences between experimental and control groups on any of the three primary outcome measures (independent learning readiness: $t(110) = 0.43$, $p = 0.67$; academic achievement: $t(110) = 0.61$, $p = 0.54$; digital information literacy: $t(110) = 0.38$, $p = 0.71$), establishing baseline equivalence between groups prior to intervention. Table 1 presents descriptive statistics for pretest and post-test scores across both



conditions.

Post-intervention analysis revealed statistically significant and practically meaningful differences between groups on all three outcome measures. The experimental group demonstrated significantly higher independent learning readiness at post-test ($M = 84.3$, $SD = 7.6$) compared to the control group ($M = 72.8$, $SD = 9.1$; $t(110) = 7.24$, $p < 0.001$, $d = 0.87$), indicating a large effect size. Academic achievement scores likewise favoured the experimental group significantly ($M = 78.4$, $SD = 8.2$ vs. $M = 69.1$, $SD = 9.5$; $t(110) = 5.62$, $p < 0.001$, $d = 0.67$), representing a medium-to-large effect. Digital information literacy gains were similarly significant ($M = 81.7$, $SD = 6.9$ vs. $M = 71.3$, $SD = 8.4$; $t(110) = 7.01$, $p < 0.001$, $d = 0.84$).

These findings provide robust quantitative evidence that WebQuest integration within a credit-modular curriculum framework produces significant and practically meaningful improvements across all three dimensions of student learning under investigation. The magnitude of effects observed, particularly for independent learning readiness ($d = 0.87$) and digital information literacy ($d = 0.84$), is consistent with the upper range of effect sizes reported in prior WebQuest meta-analyses (Zheng et al., 2008) and exceeds the moderate effects documented in Al-Nofaie's (2020) EFL context study, suggesting particularly strong applicability of the WebQuest model within credit-modular structural environments.

Qualitative Findings

Thematic analysis of reflective learning journals and faculty interview data yielded four primary themes: (1) increased learner agency and ownership of the learning process; (2) enhanced motivation and sustained engagement with disciplinary content; (3) improved capacity for critical evaluation of digital sources; and (4) initial resistance and navigational challenges associated with the WebQuest format.

Regarding learner agency, participants in the experimental group consistently described the WebQuest tasks as providing a sense of purposeful direction while simultaneously allowing meaningful choice in how they engaged with resources and constructed their task responses. One participant's journal entry captured a sentiment representative of the group: students described feeling that learning was "in their own hands" for the first time, contrasting this with the passivity characteristic of lecture-based instruction. Faculty interviews corroborated this perception, with instructors noting observable increases in student-initiated questions, voluntary library use, and self-directed supplementary research during the intervention period.

The theme of enhanced motivation was closely related to the authenticity of WebQuest tasks and their explicit connection to real-world professional scenarios. Consistent with Herrington and Oliver's (2000) situated learning framework, participants reported that tasks framed around genuine disciplinary problems generated significantly greater intrinsic motivation than decontextualised textbook exercises. This finding aligns with Gömleksiz and Fidan's (2011) observation that WebQuest tasks reduced academic anxiety by embedding assessment within meaningful activity, a pattern confirmed in the present study's qualitative data.

The challenge theme merits particular attention. Approximately one-third of experimental group participants reported initial confusion regarding the WebQuest navigation process, and several described difficulty distinguishing between credible and non-credible digital sources in early modules. These findings are consistent with Mertens' (2019) theoretical critique that structured WebQuest frameworks must carefully calibrate scaffolding intensity to match learners' prior digital competencies. Faculty interviews revealed that modules designed with more explicit



source evaluation guidance produced qualitatively richer student outputs, underscoring the significance of iterative instructional design in WebQuest implementation.

Discussion

The cumulative findings of this study offer several theoretically and practically significant contributions to the WebQuest and credit-modular education literatures. First, the large effect sizes observed for independent learning readiness and digital literacy suggest that the structural alignment between WebQuest's scaffolded inquiry design and the self-directed learning demands of credit-modular curricula creates a mutually reinforcing pedagogical environment. This finding extends Knowles' (1975) andragogical framework by demonstrating empirically that structured task scaffolding can function as a developmental bridge toward autonomous learning, rather than a constraint upon it, directly addressing Mertens' (2019) theoretical concern.

Second, the study's findings situate the WebQuest model as a contextually appropriate response to the persistent pedagogical challenges documented in Central Asian credit-modular higher education by Kerimov and Nazarov (2021) and Toshmatov and Abdullayeva (2022). The significant gains in self-directed learning readiness observed among experimental participants suggest that targeted technological interventions can meaningfully accelerate the development of independent learning competencies even within educational cultures historically characterised by didactic instructional norms.

Third, the qualitative data illuminate implementation dynamics that quantitative metrics alone cannot capture. The progression from initial resistance to increasing engagement and ownership documented across participants' reflective journals suggests that WebQuest adoption requires a carefully staged introduction that explicitly addresses students' navigational and evaluative competencies before demanding higher-order synthesis tasks. This practical insight extends the instructional design literature by identifying a culturally specific implementation trajectory applicable to transitional higher education contexts.

Conclusion

This study has provided empirically grounded and methodologically robust evidence that the integration of WebQuest technology within a credit-modular education system produces significant improvements in undergraduate students' independent learning readiness, academic achievement, and digital information literacy. Through a quasi-experimental dual-institution design conducted in Uzbekistan, involving 112 participants over a full academic semester, the research has demonstrated large effect sizes for independent learning and digital literacy outcomes, with concomitant qualitative evidence of enhanced learner agency, motivation, and critical information engagement.

The practical implications of these findings are substantial. Higher education institutions operating credit-modular systems, particularly those situated in post-Soviet educational reform contexts, may benefit significantly from the systematic integration of WebQuest-based instructional tasks as a pedagogical complement to existing modular assessment frameworks. Implementation should be accompanied by explicit digital literacy scaffolding in early modules, staged increases in task complexity across the semester, and ongoing faculty professional development focused on WebQuest design principles and formative evaluation strategies.

The study carries significant implications for educational policymakers at the institutional and national levels. The evidence supports the strategic incorporation of WebQuest technology



into national digital education policies, particularly within the framework of Uzbekistan's ongoing higher education modernisation agenda. WebQuest integration may be most effectively mandated at the level of academic standards for credit-modular courses that include significant independent study components, ensuring systemic rather than merely individual adoption.

Several directions for future research are indicated by the present study's limitations and findings. Longitudinal studies tracking independent learning competency development across multiple academic years are required to establish the durability of WebQuest-induced gains beyond single-semester interventions. Cross-disciplinary investigations are needed to determine whether the effect sizes observed in the present study are consistent across STEM, humanities, and professional programme contexts. Comparative international research examining WebQuest integration across different credit-modular systems, including those operating in European, East Asian, and African higher education contexts, would substantially enrich the external validity of the emerging evidence base. Finally, the development and validation of a contextually calibrated WebQuest design framework specifically for credit-modular educational environments represents a productive and high-priority scholarly agenda.

References

1. Abbitt, J. T., & Ophus, J. D. (2008). What we know about the impacts of WebQuests: A review and analysis of the research. *AACE Review*, 16(4), 441–456.
2. Al-Nofaie, H. (2020). WebQuest as a learner-centred tool for enhancing autonomy and motivation among EFL university students in Saudi Arabia. *Journal of Language Teaching and Research*, 11(3), 378–391. <https://doi.org/10.17507/jltr.1103.06>
3. Anderson, L. W., & Krathwohl, D. R. (Eds.). (2001). *A taxonomy for learning, teaching, and assessing: A revision of Bloom's educational objectives*. Longman.
4. Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>
5. Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). SAGE Publications.
6. Dodge, B. (1995). WebQuests: A technique for Internet-based learning. *Distance Educator*, 1(2), 10–13.
7. Dodge, B. (2001). FOCUS: Five rules for writing a great WebQuest. *Learning & Leading with Technology*, 28(8), 6–9.
8. Fisher, M., King, J., & Tague, G. (2001). Development of a self-directed learning readiness scale for nursing education. *Nurse Education Today*, 21(7), 516–525. <https://doi.org/10.1054/nedt.2001.0589>
9. Garrison, D. R. (1997). Self-directed learning: Toward a comprehensive model. *Adult Education Quarterly*, 48(1), 18–33. <https://doi.org/10.1177/074171369704800103>
10. Gömleksiz, M. N., & Fidan, E. K. (2011). The use of WebQuest in improving motivation and academic achievement in English language teaching. *International Journal of Human Sciences*, 8(1), 379–409.
11. Hernández-Ramos, P., & De La Paz, S. (2009). Learning history in middle school by designing multimedia in a project-based learning experience. *Journal of Research on Technology in Education*, 42(2), 151–173.



12. Herrington, J., & Oliver, R. (2000). An instructional design framework for authentic learning environments. *Educational Technology Research and Development*, 48(3), 23–48.
13. Kerimov, N., & Nazarov, R. (2021). Implementation of the Bologna Process in Uzbekistan: Progress, challenges and prospects. *Central Asian Journal of Education*, 6(1), 12–29.
14. Knowles, M. S. (1975). *Self-directed learning: A guide for learners and teachers*. Association Press.
15. Lan, Y., & Pang, M. (2020). WebQuest-mediated instruction and EFL writing competency: A mixed-methods study in Chinese higher education. *Computer Assisted Language Learning*, 33(5–6), 541–564.
16. March, T. (1998). WebQuests for learning. Ozline.com. <http://www.ozline.com/webquests/intro.html>
17. Martin, A., & Grudziecki, J. (2006). DigEuLit: Concepts and tools for digital literacy development. *ITALICS: Innovations in Teaching and Learning in Information and Computer Sciences*, 5(4), 249–267.
18. Mertens, D. M. (2019). Inclusive inquiry in educational research: Tensions between structure and autonomy in technology-mediated learning. *Educational Technology Research and Development*, 67(4), 1031–1048.
19. Ministry of Higher Education of Uzbekistan. (2019). State programme for higher education development 2019–2023. Ministry of Higher Education, Science and Innovation.
20. Perkins, R., & McKnight, M. L. (2005). Teachers' attitudes toward WebQuest as a method of teaching. *Computers in the Schools*, 22(1–2), 123–133.
21. Piaget, J. (1972). *The psychology of the child*. Basic Books.
22. Souza, M. N., & Linhares, R. (2017). WebQuest in nursing education: Promoting clinical reasoning through inquiry-based digital tasks. *Nurse Education in Practice*, 27(1), 38–44.
23. Tashakkori, A., & Teddlie, C. (Eds.). (2010). *SAGE handbook of mixed methods in social and behavioral research* (2nd ed.). SAGE Publications.
24. Toshmatov, B., & Abdullayeva, N. (2022). Self-regulatory learning behaviours among undergraduate students in Uzbekistan's credit-modular system. *Eurasian Journal of Educational Research*, 98, 45–67.
25. Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Harvard University Press.
26. Warschauer, M., & Meskill, C. (2018). Technology and second language teaching and learning. In J. Rosenthal (Ed.), *Handbook of undergraduate second language education* (pp. 303–318). Lawrence Erlbaum.
27. Yoder, M. B. (1999). The student WebQuest: A productive and thought-provoking use of the Internet. *Learning & Leading with Technology*, 26(7), 6–9.
28. Zheng, R., Stucky, B., McAlack, M., Menchana, M., & Stoddart, S. (2008). WebQuest learning as perceived by higher-education learners. *TechTrends*, 52(2), 41–45. <https://doi.org/10.1007/s11528-008-0135-y>

