# WebQuests 2.0

## The WebQuest Concept Revisited

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**Abstract:** At the beginning of this century, WebQuests were a widely recognized instructional approach in schools for integrating the Internet into classroom learning. In subsequent years, however, the concept gradually faded from educational discourse. This article examines the reasons for this development. At the same time, it outlines a concept for WebQuests 2.0 that reconnects the approach with current debates in media education and artificial intelligence.

**Suggested citation:** Heinz Moser, WebQuest 2.0: The WebQuest Concept Revisited. DMB-Studio, Zurich 2026 (https://digitalemedienbildung.com/aktuelle-publikationen)

WebQuests emerged as a response to the rise of the Internet in the 1990s. In my publication on this topic, which appeared in 2000, I noted that schools had begun to acquire PCs and Internet access with increasing frequency, but that access to the Internet did not automatically provide ideas for its didactic use in the classroom. At the time I wrote: "Obviously, it is not enough simply to surf aimlessly around the Net. If one is looking for a specific piece of information, a conventional encyclopedia is often faster and, moreover, provides more precise information" (Moser, 2000). Against this background, the WebQuest concept appeared attractive as a way of working creatively with the Internet without getting lost in aimless searches.

The idea of WebQuests was developed by Bernie Dodge at San Diego State University in the United States. WebQuests were intended to enable inquiry-oriented activities by students on the Internet. On his WebQuest homepage, Bernie Dodge defined the concept at the time as follows (see also Dodge, 2005):

> *WebQuests are inquiry-oriented activities in which most or all of the information used by learners comes from the Web. WebQuests are intended to make good use of learners' time, to emphasize the use and processing of information rather than the search for it, and to support learners' thinking at the levels of analysis, synthesis, and evaluation. The basic idea was not to encourage aimless surfing on the Net, but rather targeted information seeking guided by teachers, who selected important, topic-relevant Internet links that students could then use for their thematic work.*

Teachers therefore curated learning by making a targeted selection of information pages for students to work with. At the same time, however, the concept always emphasized scaffolding: the structure provided by teachers was intended to recede as the learning process progressed, leaving increasing room for students' own learning impulses. Learners would therefore discover and work with additional websites themselves, which could ultimately supplement and modify the task they had been given. In general, this more individual form of research was to be accompanied by targeted, temporary coaching from teachers during the learning process. This support was gradually reduced as learners became more independent.

In my original implementation of the WebQuest concept, the process of developing "knowledge worlds" was to be complemented at the end by a "learning spiral," initially within the class and later increasingly across classes. The insights students gained in the learning process were to be repeatedly processed and deepened step by step within the WebQuest work—first in small-group work, and then especially through project evaluation in the class. The results were then to be returned to the Web by documenting and presenting them there, for example on a school homepage, where such a site existed. In terms of this learning spiral, the hope was that the results could then be taken up by other classes and developed into new WebQuests. In the second edition of my book, which has now been republished on this website, I wrote: "This means that the knowledge worlds developed by students should in turn be made available to other students as examples and resources for their own learning activities" (Moser, 2008, p. 91).

In practice, however, this transfer of knowledge back to the Web was only rarely carried through consistently, because it would have required additional competencies on the part of teachers and learners. It also raised a range of follow-up questions—for example, concerning copyright when information from the Internet was to be republished. Networks of teachers would also have had to emerge and remain committed to a particular WebQuest topic over the long term.

The WebQuest model as it was practiced at the time therefore remained largely confined to the internal world of the school. Within that setting, however, it was long regarded as a proven and relatively easy-to-implement didactic concept that incorporated newer constructivist models of learning and placed aspects such as scaffolding and a certain degree of learner self-efficacy at the center. The clear structure of the WebQuest framework enabled experiences of success that were reinforced by the final presentation to the whole class.

Fundamentally, WebQuests were didactic models that were among the first attempts to transfer problem-based learning (PBL) to work with Internet-based knowledge sources. WebQuests also fit very well with the structural model Michael Kerres proposed for PBL methods when he wrote: "Learners receive an assignment ('mission'), and a structure ('milestones') is specified for how the assignment is to be worked through and what result is expected" (Kerres, 2012, p. 343).

## Specifying the WebQuest Approach

Against this background, WebQuests developed a structural model with six aspects for the planning and implementation of individual projects:

- Topic
- Tasks
- Resources
- Process
- Evaluation
- Presentation

At the beginning, teachers were to formulate a challenging topic that engaged the work of the entire class and then led to differentiated tasks that could be worked on independently by small groups. As I wrote at the time, the selected topic should be introduced as vividly as possible. This might take the form of a short story ("You have been transported by a time machine to the age of the Romans…"), or an appeal to the students' prior knowledge ("You all know dinosaurs; let us collect what you already know about them…"), and so on.

In preparation, teachers assembled resources with which the tasks could be addressed, usually links to relevant websites. In addition to hyperlinks and references to Internet sources, references to books, videos, and other media were often included. Overall, this required intensive preparation by teachers in the sense of a preliminary search, corresponding to the step I have described above as "curated learning."

The process aspect of learning was defined in this concept as teacher guidance. Acting as coaches, teachers were expected to help where learning difficulties arose—for example, when students had trouble structuring their material. The next steps focused on evaluation and presentation. The individual groups presented their results in class and received feedback from other groups. This was complemented by self-evaluation, in which students—often with the participation of the coaching teachers—reflected on their own work process. The individual groups then presented their work to the class.

The WebQuest concept proved quite successful over the following years. At the same time, it became clear that it represented only one part of the many possibilities involved in learning in and with the Internet. Discussion of the relatively demanding WebQuest model therefore gradually diminished. With its emphasis on problem-based learning, self-organized classroom work, and a constructivist approach, it placed considerable demands on the teachers involved.

## New Approaches to Learning with the Internet

I do not intend to provide an extensive account here of Internet-based learning at the beginning of the twenty-first century. Instead, I will briefly highlight several other possibilities that show how the Web was incorporated into classroom processes. These were generally smaller-scale approaches that could be integrated into everyday teaching more easily and flexibly than the often rather extensive WebQuest projects. In the second part of this article, however, I will return to WebQuests and describe the concept of WebQuest 2.0—a conceptualization designed specifically for learning in the context of the emergence of artificial intelligence and the AI assistants associated with it.

Smaller-scale approaches that required less preparation and were easier to carry out increasingly displaced discussion of WebQuests during the early 2000s. They included, for example, the following ways of integrating digital media into school learning.

Whiteboards and digital pinboards were often incorporated into lessons when the appropriate equipment was available in classrooms. Such digital boards provided a useful opportunity to promote collaboration. One popular use was to collect contributions during brainstorming sessions, arrange them in a grid, and then continue working with the individual items. There was, however, also criticism of whiteboards. As early as 2013, Thomas Knaus critically described the transition from the traditional board to the whiteboard—from "green" to "white." He asked why the blackboard, formerly the central medium of teacher-centered instruction, should now be replaced by a digital medium. He asked critically: "Why this uncritical enthusiasm for digital board systems, and where does the advance trust placed in them come from?" (Knaus, 2013, p. 17). This points to the fact that relatively simple teaching tools, even when already installed in classrooms, contribute little that is genuinely new to didactics, despite the promise of "digital progress." Whiteboards are often used primarily as static display media—in effect, as digital replacements for projectors displaying PDFs, PowerPoint slides, or YouTube videos. This is a long way from actually organizing learning processes through student collaboration at the whiteboard.

Another frequently discussed Internet-related approach was the "flipped classroom." Here, the phases of the learning process are reversed. Instead of teachers first conveying the essential content in class and then using homework for consolidation and practice, the flipped classroom begins with students working independently on the concept or content to be learned. Discussion and deeper engagement with that material then take place in class.

In contrast to WebQuests, the flipped classroom is not centered on problem-oriented research within collaborative learning. Rather, students first acquire the input independently, after which discussion and deeper exploration take place in the classroom. Critics have asked to what extent younger children depend on interaction with teachers—for example, when they have not understood something and want to ask questions. This could mean that children from less educationally advantaged homes ultimately receive less support from their parents. Nevertheless, there are also similarities to the WebQuest method. Both approaches aim to move beyond purely frontal instruction and to integrate students' self-organized learning more strongly into the teaching process. Digital media also play an important role in both WebQuests and the flipped classroom. As Bucher and Höfler (2019, p. 73) note, most users of this method rely on videos found on platforms such as

YouTube or produced by the teachers themselves. A common feature among many teachers using the approach is that they make videos for their learners and then make them publicly available online—a practice that recalls the “learning spiral” originally intended in WebQuest work.

Adaptive learning has also been discussed intensively in recent years in connection with learning through digital media. Instead of presenting learning content to all students in the same form, modern software systems dynamically adapt content, difficulty level, pace, and feedback to individual learners in real time. According to Meier (2020), adaptive learning environments are designed in such a way that the computer can be used as an interactive learning aid, allowing different materials and forms of support to be assigned according to individual needs. This personalization is intended to prevent both underchallenge and overload and to align learning precisely with each student’s current level. However, it also entails increased individualization, with collaborative learning tending to disappear from view. Intelligent tutoring systems (ITS), for example, belong to the field of adaptive learning and are especially useful in structured subjects such as mathematics or grammar. One example is the German federal-state AIS project. As an intelligent system, the learning software adapts to the needs of individual students. They receive personalized learning paths with content and exercises for practice and consolidation, and these paths change according to their level and progress.

Explanatory videos have been discussed particularly frequently in recent years, above all on platforms such as YouTube and, more recently, TikTok. Many of these videos were initially produced by committed individuals who presented school-related or subject-specific content in easily understandable form, often using visual representations such as images and video. They served as additional support for learners, especially for those who wanted to work through or deepen a particular topic again.

The landscape has since changed considerably. There are increasing numbers of commercial providers and educational publishers distributing learning videos. On the website of the German Friedrich Verlag, for example, the use of short videos is described as follows: “Influencers rank highly among the career aspirations of young students, and many teachers and parents are annoyed by the amount of time students spend watching TikTok videos. Rather than simply banning their use in class, more and more school classes are taking a different approach. Hardly anything motivates young students today as strongly as producing short videos, supported by their idols—with the software, materials, and methods of the non-profit initiative DigitalSchoolStory, this becomes possible.”

In addition, individual teachers and students produce explanatory videos in their own subject areas. An even more recent development concerns short-form videos such as those on TikTok. The aim is to compress learning content to its core and extract the most important element of what is to be learned. In this way, educational use tries to take advantage of the enormous popularity of TikTok as a social-media format among young people. Adolescents are accustomed to consuming large quantities of videos that reduce content to short versions of two or three minutes. This can also work for school purposes, although the educational value of such snippets is disputed. On the other hand, short videos can be useful as an introduction to a topic. They cannot claim to explain a subject comprehensively or conclusively, but they can function as a gateway by arousing interest and curiosity (see Sanchez, Booth, and Karolczak, 2026).

All of the approaches briefly outlined above concern relatively small-scale didactic concepts, in some cases even in a microdidactic sense. They do not structure teaching on a large scale; instead, they allow Internet-based tools to be used selectively—for an introduction, for practice, or for the adaptive acquisition of a particular skill.

## E-Learning and Learning Platforms in Schools

If one wants to describe the broader relationship between the Internet and the school environment, another development is ultimately more significant: the concepts of e-learning that have spread widely in recent years and have become linked to learning platforms in schools, universities of applied sciences, and universities. Digital platforms—large-scale structures that emerged on the Internet as organizational forms involving multiple actors—were increasingly used to organize school learning processes as well. Students received their own accounts in which their digital activities were collected and stored. Individual tasks could be assigned to them and their learning progress could be monitored. Results and grades could also be documented on the platform.

The decisive driver of this development, however, was not didactics but the coronavirus pandemic, which made normal classroom teaching impossible during the school closures of the early 2020s. In this situation, e-learning provided a framework for connecting the Internet and homeschooling in a hybrid learning context. Out of sheer necessity caused by school closures, “blended learning” came to the fore as a way of combining digital learning opportunities with forms of independent learning at home—a hybrid mixture of Internet-based learning and homeschooling.

The discussion of learning with digital media therefore moved beyond small-scale models of Internet didactics and toward the design and interaction of the e-learning that schools were beginning to offer with the demands of homeschooling. The question became whether learning in hybrid contexts of homeschooling and online learning could be regarded positively as an unexpected educational experiment born of emergency—or whether it should be viewed as destructive to the development of the children and adolescents affected, because communal learning at school and its associated experiences were suddenly replaced by the isolation of learners at home and by parents being overwhelmed in the role of unpaid learning assistants.

Schools, too, entered the COVID years unprepared. “Blended learning” was an approach born of necessity and often overwhelmed the teachers involved. This was one reason why the use of digital media in schools received largely poor marks from the public. What failed at that time was not learning with digital tools as such, but an ad hoc practice that could only be prepared very inadequately.

This also helps explain why skepticism toward digital media in schools has risen sharply again in recent years. The widely discussed school bans and the tendency to reduce digital teaching tools in favor of tangible books and lesson sequences without digital support must also be understood in this context. Scandinavian countries, moreover, have drawn a direct connection between the widespread introduction of one laptop or tablet per child and the loss of basic skills such as fluent reading and handwriting (Jornitz, 2024).

## WebQuest 2.0

I do not want to pursue this broader discussion further here. Instead, I return to the near disappearance of WebQuests from the didactic debate about using the Internet in school. The main question is why WebQuest work has now almost completely vanished from the educational landscape. There have certainly been attempts to renew the WebQuest idea as a learning scaffold and a model for collaborative learning among students, but the idea of a WebQuest 2.0 has not become established. In my view, this is mainly because the research model closely associated with “Googling” is no longer suitable or practicable as the guiding model for Internet-based learning. It does little good simply to update WebQuests with so-called twenty-first-century skills such as creativity, critical thinking, collaboration, and communication (see Levin-Goldberg, 2016).

The example of WebQuests makes one point particularly clear: technological media innovations not only extend human possibilities for action; they repeatedly require a readjustment of processes of normalization and education (Knaus, 2024, p. 15). New forms of working with the Internet in the classroom have moved so far away from the old patterns that continuity can no longer be assumed. Acquiring knowledge in the context of “artificial intelligence” no longer requires intensive research in the same way. Instead, it requires the ability to connect with AI assistants such as ChatGPT, Gemini, Claude, or Grok and to ask intelligent questions. When “Googling,” one entered keywords into a search field, called up websites, and then made those sites the objects of more extensive research. In their original design, WebQuests reflected how intelligent and meaningful searching on the Web could be made productive for school learning on the basis of curated recommendations from teachers.

Generative language models, or LLMs (Large Language Models), which form the basis of contemporary artificial intelligence, work quite differently. Supported by global technology corporations, they are currently transforming the way people engage with information and knowledge.

LLMs are neural networks that learn from enormous quantities of text to process human language and generate new, context-related texts. The model does not learn like a human being through direct understanding of the world, but through the analysis of probabilities. It continuously calculates which word is most likely to come next and can therefore answer questions, summarize texts, and conduct conversations. Someone who searches the Internet on this basis asks questions and enters into a dialogue with an AI assistant. Although the AI operates on probabilities, it creates the impression of a real conversation and of understanding and thought.

When information is sought on this basis, users no longer work primarily with keywords but formulate “prompts.” A prompt is an instruction or request asking the AI to perform a particular task rather than merely directing the user to a page on which they must then conduct their own research. The AI assistant instead attempts to answer the request directly in natural language and often incorporates or summarizes important sources at the same time.

Entering a single prompt sequence, however, rarely leads directly to the desired goal. Users generally enter into an iterative dialogue with the AI chatbot. Working with prompts can be compared to a conversation with an intelligent assistant that draws on a vast store of knowledge and formulates answers and refinements in response. The dialogue between the questioner and the AI is therefore used to differentiate initial answers and to deepen or expand the results.

The difference from WebQuests at the beginning of the millennium becomes clear in an example described in my earlier book (see Moser, 2000, pp. 56 ff.). The WebQuest “The Dinosaurs Are Coming!” was presented there. The “topic” and “task” were described as follows:

> *The topic:*
> *Travel back through time to learn something about dinosaurs. The aim of this expedition is to become familiar with prehistoric life and understand it. Learn about the size, shape, movement, and diet of dinosaurs.*
>
> *The task:*

- Read in order to find information about dinosaurs and note the most important points using the Internet.
- Use the information to compare different groups of dinosaurs in terms of their similarities and differences.
- Print out pictures of dinosaurs and paste them into your science notebook together with the information you have found.
- Learn words relating to dinosaurs and prehistoric life.

I recently entered this 2000 text unchanged as a prompt in ChatGPT. After about twenty seconds, I received a longer text with detailed information on the questions listed above. For this article, I then asked for a short summary, reproduced here (ChatGPT, June 17, 2026):

> 🦕 *Dinosaurs – Short Version*
>
> 📅 *Period: Dinosaurs lived approximately 230 to 66 million years ago. They are extinct today.*
> 📏 *Size: There were small and very large dinosaurs. Some were only about the size of a chicken; others were enormous.*
> 🌿 *Diet: Herbivores ate plants and leaves. Carnivores hunted other animals.*
> 🏃 *Movement: Some walked on two legs, others on four. Some were fast, others slow.*
> 🧠 *Special features: Some had horns, armor, or feathers. We know dinosaurs today only from fossils (bones preserved in rock).*

Much of what would have required laborious research in a WebQuest can thus be placed on the table by an AI assistant within seconds. Students no longer experience it as a learning adventure to extract such information manually from complex Internet research when it can be retrieved almost instantly from generative LLMs. Even if they want to know more about dinosaurs after seeing these first results, they are more likely to ask the AI assistant additional questions than to continue using manual research methods. Because these models have been trained on enormous quantities of data, they also contain—despite all their imperfections—a broad range of expertise that can often be relied upon, though never blindly.

The difference between the “old” WebQuests and a new form of WebQuest 2.0 becomes particularly clear if one returns to the metaphor of the “quest,” which in my books at the beginning of this century was used to illustrate the method. WebQuests were described as learning adventures: searches for knowledge comparable to medieval knights seeking the Holy Grail. This image of an adventurous search initially loses its meaning in the age of AI, because one may already feel overwhelmed by the speed at which AI produces results.

If we retain the medieval image, information seeking in the age of AI would have to be described very differently. I would picture knights arriving tired at an oasis after their day’s work and drinking from fountains of knowledge that bubble up there. Yet they can never be entirely certain whether the knowledge is poisoned or mixed with indigestible ingredients. The situation is therefore reversed. The main task is no longer to discover the desired knowledge through laborious effort; it can easily be found at one of the available sources. The decisive task is to examine the quality of this knowledge before using it further—to ask whether it is beneficial to people or whether it is, perhaps, indigestible and misleading.

This change in the way knowledge is sought on the Web means, in the final analysis, that it has become largely pointless to approach Internet knowledge through the research procedures of the old WebQuests. A student now only needs to ask a few questions of an AI assistant and can receive within minutes the answers that previously had to be assembled through laborious work.

Nevertheless, searching for information by means of AI is by no means less risky or more reliable than searching in the era of classical search engines. AI assistants are susceptible to misinformation and prone to hallucinations. Because they do not empirically verify information but generate it on the basis of statistical probabilities, errors are systemic. The underlying architecture of a language model also strongly shapes its outputs. Grok, for example, has been shown to reproduce right-wing and far-right narratives.

It is not to be expected, however, that traditional search will simply reassert itself. The major technology corporations are currently rebuilding their search engines around the requirements of AI. Those who search for information on the Web must therefore adapt to these new standards, which are being set by the technology giants. This means that traditional searching for terms through search engines such as Google may soon exist only in niche forms. More generally, information work on the Internet will increasingly have to be organized through the new practices of prompting.

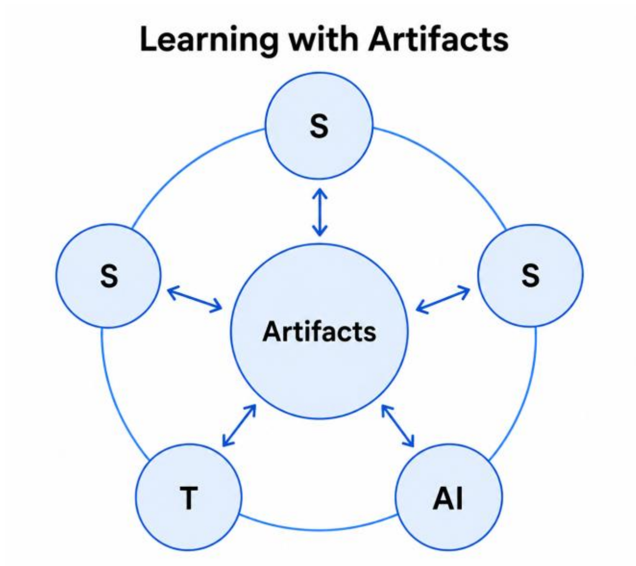
## Working with Cultural Artifacts in WebQuest 2.0

One of the central features of WebQuests was their effort to involve students in a learning process closely connected with constructivist concepts. The aim was not simply to absorb knowledge from the environment and deposit it in a personal cognitive model, but to work on and further develop it in the process of integration. In short, learners were not supposed merely to consume knowledge but actively to generate it. Yet if AI itself generates all knowledge and conveys it to learners, this can also represent a step backward. Instead of active appropriation, there is often only passive transfer: content moves unreflectively into the learner's store of knowledge.

WebQuest 2.0, as developed here, offers a way of avoiding this trap and resisting a regression based on the assumption that content offered by AI is correct and valid per se. If one continues to favor a social-constructivist approach based on the active negotiation of meaning, technology-driven assistants cannot be allowed to dominate the formation of opinion. In line with George Siemens's connectivist understanding of learning (2006), I therefore conceptualize learning as embedded in networks that are hybrid in character, co-constructed by human and technical network structures.

These networks comprise a number of different positions integrated into the learning process. One position is occupied by the students (S); a second by the technical AI assistants (AI), with their LLM-based language models; and a third by the teachers (T). At the center are the cultural artifacts that are retrieved, generated, and further developed in the learning process. They are the epistemic objects around which learners' networks form and on which learners work.

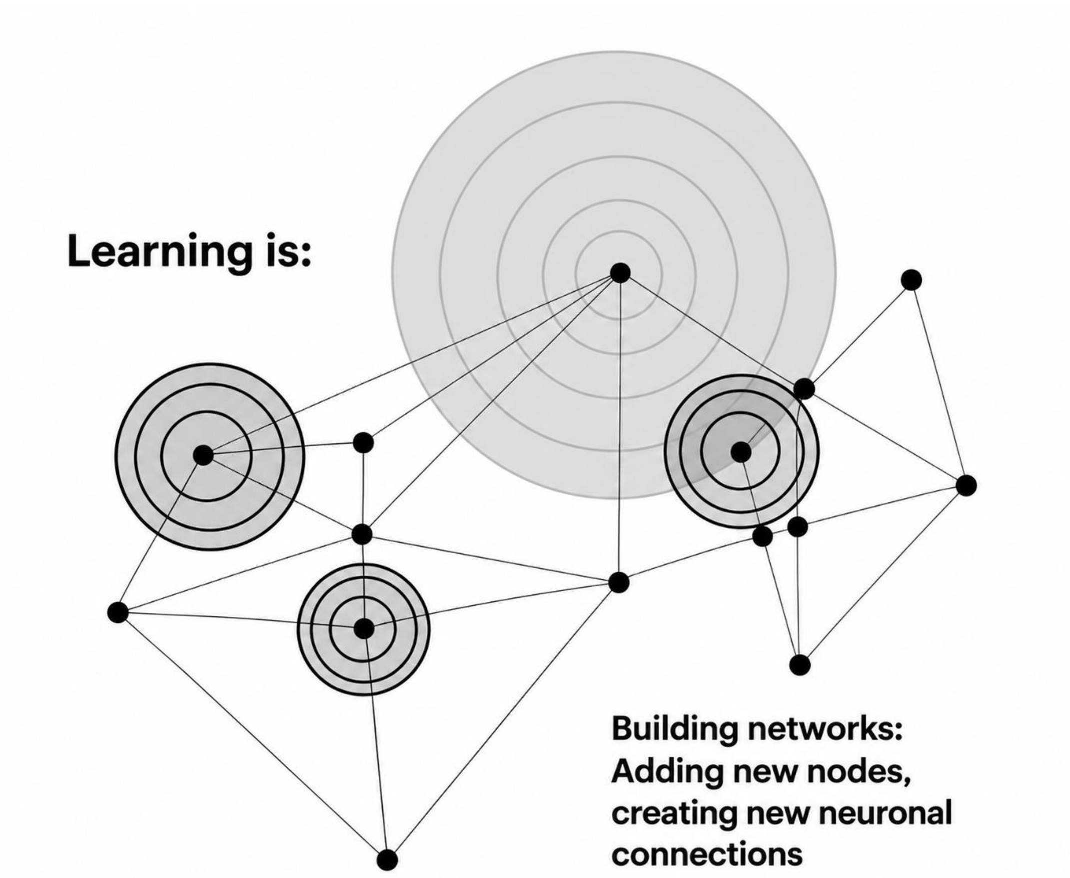
The network model assigns different roles to the participants. Students (S) work collaboratively with one another while drawing on the knowledge stores of AI. Teachers (T) support this process, much as in the original WebQuest concept, through accompanying coaching.




At the center of the diagram are the cultural artifacts around which learning revolves. They reflect the current state of knowledge and become the focus of engagement and further processing, resulting in a new or modified knowledge node that can then be integrated into one's own knowledge. In George Siemens's connectivist account, networks consist of nodes of very different kinds: people, databases, AI systems, documents, and so forth. What matters is that learning means moving through these networks, examining connections, working on them, and changing them.

George Siemens understands learning as the creation and navigation of connections in networks. In this context, experiences in the surrounding environment—that is, experiences located in other nodes—are important for one's own system because they increase the capacity to seek connections between information sources and to create useful informational relationships in the sense of a knowledge economy (Siemens, 2005, p. 6). This includes hybrid cooperation between technology and people, such as that realized in the interaction between AI assistants and learners.

Siemens's approach goes beyond a constructivist model of learning that operates within the personal system boundaries of individuals. Siemens points out that, in contrast to constructivist assumptions, it is becoming increasingly difficult to reduce information sources according to one's own system boundaries; instead, these sources must be related to engagement with the networks that are relevant in a given context. When we act in complex situations, we often operate at the interfaces of different systems. Here too, the experiences of the environment are important for one's own system, as is the capacity to seek connections between information sources and create useful informational relationships (Siemens, 2005, p. 6). Individual nodes in networks can support one another, but they can also change when new nodes exert greater attraction on the network. New nodes can in turn create new neural pathways in the network.




Working with these bodies of knowledge also generates new forms of artifacts that are returned to learners and may in turn influence the surrounding environment.

With this connectionist approach, George Siemens is close to Carl Bereiter's (2002) reflections on conceptual artifacts, which for Bereiter constitute the epistemic objects of learning. Bereiter assumes that the brain is not a knowledge container functioning like a data store that automatically reproduces everything conveyed to it from outside. Learning is therefore not a matter of filling the “database” of the human brain with the “right” things. Rather, learning means engaging with knowledge and cultural artifacts that learners try out, modify, and transform into newly articulated knowledge. Learning groups—for example, school classes—work in ways similar to a research community: they ask questions, develop ideas, test them critically, and improve them continuously.

The same applies to the knowledge that AI recommends to its users. It is not objective knowledge, but initially consists of artifacts produced within the training processes of LLM models and placed at our disposal when retrieved. Knowledge accessed through AI is therefore nothing other than artifacts in the form of texts, images, models, digital music, and so forth. By retrieving this knowledge through prompts, it becomes available for discussion and examination.

## The Structure of WebQuest 2.0

The essential feature of WebQuest 2.0 is no longer the model of curated research, but the question of systematic knowledge evaluation and the further development of knowledge in a society increasingly shaped by AI models. The focus therefore shifts away from merely reviewing curated sources and toward the critical examination and transformation of knowledge. In an increasingly AI-dominated knowledge society, this competence becomes a central cultural technique.

In practical classroom work, this means that artifacts generated through AI as a new model of Internet search become objects of learning. They are processed and further developed through work and reflection. From this perspective, learning does not take place in isolation through engagement with individual cognition, but through collaborative knowledge work—that is, through the co-constructive appropriation of artifacts and their discursive further development. Learning is therefore a deliberate activity in which knowledge is generated collectively. It concerns the shared engagement with and further development of those bodies of knowledge that Bereiter calls “conceptual artifacts.”

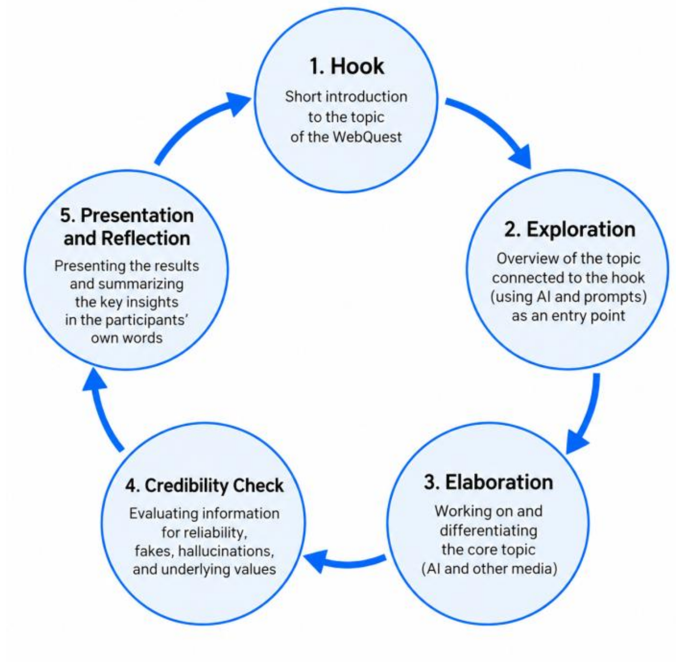
### Creators and Co-Creators in Knowledge Work

The working topics in WebQuest 2.0 are therefore conceptual artifacts such as those generated through prompts. These, too, are human-made constructs used to solve problems or explain the world, because behind them lie millions of data points condensed within the generative LLM. The artifact presented by the AI assistant serves as a common and integrating anchor for further work—something to which participants can repeatedly refer in discussions, debates, and the elaboration of individual aspects.

The nodes in which this collaborative knowledge is created and expanded extend far beyond the cognition of individual learners. In the context of artificial intelligence, they include different positions that come together: the students involved, the teacher, but also the AI and the knowledge embedded within it. Learning therefore takes place in hybrid constellations of humans and technology, and through cultural artifacts as objectivations of human knowledge. Kerres also describes this close relationship between technology and knowledge work: “Digital technology and the Internet are, at their core, to be understood as constructivist media in which users’ perceptions and patterns of use first create an artifact (visible, for example, in social platforms). Digital technology contains spaces of possibility in which the actions of actors generate realities that in turn lead to new technological developments” (Kerres, 2020, p. 11).

For everyday knowledge work, this means that the participants come together and produce a plan, a theory, a problem formulation, a visionary statement, or some other form of conceptual artifact. These objects function as cultural objectivations through which learning takes place and which become the objects of cooperative action. In the age of AI, it is important to include the hybrid relationship between humans and technology consciously. The knowledge stores of AI are ultimately crystallized human knowledge stored and circulated in the form of data. The function of this knowledge for learning, and the conclusions that can be drawn from it, are therefore essential components of WebQuest 2.0.

Students should learn what role this hybrid of humans and technology, mediated through AI, has come to play in everyday life. In this context, co-construction of knowledge also means that the human being remains the primary creator of knowledge, while AI assistants should be regarded as co-creators. In WebQuest 2.0, students remain the conductors of knowledge work: they build and modify artifacts. AI assistants must not, as co-creators working in the background, silently take over this work and thereby replace human creative agency.




The process of a WebQuest 2.0 is illustrated by the diagram above:

Hooks: The WebQuest topic is introduced in class through a short stimulus intended to arouse interest and motivate further work. Hooks do not provide comprehensive information; they introduce a topic briefly and in a motivating way. Three or four sentences may be sufficient, as may an apparently contradictory diagram, a magazine cartoon, or a one-minute TikTok video.

Hooks primarily aim to:

- Generate attention: the hook interrupts established routines and directs attention to the new topic.
- Demonstrate relevance: it shows why the new topic matters to students.
- Generate cognitive dissonance: the hook presents a paradox, a puzzle, or a surprising statistic that conflicts with everyday knowledge and thereby arouses interest.

Hooks can also prepare a choice among several possible WebQuest topics, for example by presenting alternative themes in short TikTok videos.

Exploration: Initial exploration takes place by using prompts with one of the major AI models (ChatGPT, Gemini, Claude, and so on). The result is an overview of the area to be worked on. If the result is unsatisfactory, learners can switch to another AI assistant or ask follow-up questions. The outcome of this phase is the anchor—a summary representation of the WebQuest topic generated through prompts.

A crucial feature of this phase is that the artifact produced during exploration is itself worked through again. Students clarify technical terms, try to fill gaps in understanding, and identify contradictions and possible hallucinations of the system. At the same time, they determine what needs to be deepened and clarified in the elaboration phase and which questions should be taken up by individual working groups. The class therefore structures and plans the subsequent project phase in the form of a work plan for the entire class that can be referred to at any time.

Elaboration: In this phase, small groups pursue and work on specific aspects of the anchor topic. The dialogue with AI can continue ("What exactly did you mean by that? Can you explain it in more detail?"). One useful option is "reverse prompting," in which the chatbot is asked for three sources: "Name three concrete, existing primary sources (books, studies, or websites) that support the claim you have just made." Specialist literature can also be consulted, or learners can conduct small-scale inquiries of their own to test AI claims and verify the robustness and evidence of the artifacts.

At this stage, it is no longer a matter of working exclusively with AI assistants. It is often useful to consult scientific sources or statistics, to approach experts directly with the questions under investigation, or even to carry out small surveys using one's own data.

Results: The results are brought together in the classroom, usually in the form of presentations by the different student groups. On the basis of these learning experiences, the artifact that served as the guiding model can be revised and adapted. It is probably advisable not to delegate this elaboration to AI, but to carry it out in the class itself. The result does not have to be a long academic text. Students may prefer visual methods—a diagram, photographs for illustration, a summary explanatory video, and so on.

Students thus assume the position of creators who actively develop the conceptual artifacts themselves rather than simply delegating the work to AI. To use an image: the students are not merely individual voices commenting on the artifacts under consideration; they take on the role of conductors who guide the process of generating knowledge and cooperate closely with their network in doing so.

## An Example of WebQuest 2.0: Pets

To illustrate the process described above, I have applied it to an example. In the hook, two children in a primary-school class briefly say in a TikTok video made with their teacher that they would like to have a pet. It also becomes clear that not all parents are enthusiastic about the idea. In this way, interest in the topic is aroused among the students.

For the exploration phase, the following prompt is submitted to Grok, the chatbot on X (Elon Musk): "The Müller family has two children. They want to get a pet. What possibilities are there? The landlord says that by no means all animals are suitable." (Prompt submitted June 21, 2026.)

Within a few seconds, the AI produced the following response:

> *Good pet options for the Müller family with three-year-old Tina and five-year-old Kevin*
>
> *With two such young children (ages 3 and 5), the pet should above all be safe, robust, not very aggressive, and relatively easy to care for. The children cannot yet take full responsibility; the parents must perform most of the care and supervise interactions. The pet should be enjoyable without becoming overwhelming.*

| Animal | Suitability | Advantages | Disadvantages | Effort |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Guinea pigs | ★★★★★ | Very child-friendly, social, rarely bite, active during the day | Need space (at least 2 animals), hay smell | Medium |
| Rabbits | ★★★★☆ | Calm, cuddly, can become tame | Can scratch/gnaw, need exercise | Medium |
| Hamsters | ★★★☆☆ | Small, cute, inexpensive | Nocturnal; short life span (2–3 years) | Low |
| Fish (e.g., guppies, goldfish) | ★★★★☆ | Very safe, calming, low allergy risk | Little interaction; equipment and water changes | Low–medium |
| Budgerigars / cockatiels | ★★★★☆ | Intelligent, can learn sounds, entertaining | Dust, noise, need free flight | Medium |

*Top recommendation: Two or more guinea pigs. They are best suited for small children—they are awake during the day, squeak with excitement when fed, and are very social. Many families with young children are very happy with them.*

Suitable with reservations:

*Cat: Very good if the family already has experience. Cats are independent, however, and may scratch when overwhelmed. For a three-year-old, a calm adult cat from an animal shelter would be preferable.*
*Dog: Only with a very calm breed (e.g., Labrador, Golden Retriever, Cavalier King Charles Spaniel) and if the parents have a great deal of time for training. With children aged three and five, the workload is high (walking, puppy training). It may be better to wait another one or two years until the children are older.*
*Rat: Very intelligent and trusting, although many parents have reservations because of the image associated with rats.*

Less suitable for this age group:

- Dwarf rabbits (often too small and easily frightened).
- Reptiles (bearded dragons, leopard geckos, etc.): too little interaction and demanding hygiene requirements, including a salmonella risk for small children.
- Large parrots: too loud, strong-biting, and very demanding.
- Chinchillas: rather shy and nocturnal.

The class then works through this text with regard to the following aspects:

- Understanding the terminology: What does "nocturnal" mean? What does "intelligent" mean in animals? What is "free flight" for a budgerigar? What does "allergy risk" mean in relation to fish? What is meant by "salmonella risk" in reptiles?
- Knowledge of the animal species mentioned: What are bearded dragons or leopard geckos? What are chinchillas?
- Evaluation embedded in the text: Is the top recommendation of guinea pigs really so uncontroversial? Why are only dwarf rabbits described as unsuitable? Why does the hamster receive only three stars?
- Where something is unclear, a new prompt can be sent to Grok: Can a budgerigar be taught to speak, and how long does it take? Why are only dwarf rabbits mentioned and not rabbits in general? Are there other dog breeds besides those named that might be suitable?
- What does another chatbot say? Google's Gemini, for example, could be used.

Gemini's response to the follow-up question (also on June 21, 2026) is reproduced below:

*By and large, my colleague has captured the most important ground rules well. With children aged three and five, responsibility lies 100 percent with the parents, and protecting the animal from the children (and vice versa) is absolutely crucial.*

*However, there are several serious points in the evaluations of the individual animals on which I strongly disagree. Some of these animals are greatly underestimated in everyday life with small children, which unfortunately often leads to disappointment or animals being given away. Here is my assessment compared with my colleague's list:*

*1. Where I fully agree*

- Basic principle: Three- and five-year-old children cannot yet assume responsibility, and interactions must always be supervised.
- Hamsters (3/5 stars): Correctly classified. Hamsters are absolutely unsuitable for small children. If they are woken during the day, they defend themselves and may bite; this is not compatible with a three-year-old child.
- Reptiles and parrots: Classifying them as "less suitable" is correct. The salmonella risk posed by reptiles is often underestimated, while large parrots belong in expert hands.
- Dogs and cats: The assessment of these larger animals is realistic. With such young children, a dog effectively represents the workload of a "third small child."

*2. Where I disagree (critical points)*

*Guinea pigs and rabbits (★★★★★ / ★★★★☆) – rated far too highly!*

- Not cuddly toys: Both guinea pigs and rabbits are prey animals. Biologically, they dislike being picked up, carried around, or held tightly. If they remain rigid, this may reflect extreme fear rather than enjoyment.
- Risk of injury: Rabbits have enormous strength in their hind legs. If a five-year-old holds one incorrectly, it can scratch badly or even injure its own spine.
- Contradiction in the list: The bot gives "rabbits" four stars but places "dwarf rabbits" among the less suitable animals. Biologically, this makes little sense because their husbandry requirements and behavior are very similar.
- Conclusion: Excellent as animals to observe, but often frustrating for three- and five-year-olds who want to touch and cuddle a pet. At most two to three stars.

*Budgerigars / cockatiels (★★★★☆) – rated far too highly!*

- Noise and susceptibility to stress: Children of this age run, shout, and behave unpredictably, which can place birds under constant stress.
- Hygiene: Feather dust and scattered food are not ideal in a living room with small children who play on the floor. The birds are also extremely delicate; one clumsy grip by a three-year-old can be fatal.
- Conclusion: Unsuitable for this age group. At most one to two stars.

*Fish (★★★★☆) – effort underestimated*

*Fish are excellent in one respect because they are completely safe: they do not bite or scratch. Yet the effort involved is often underestimated. Maintaining a stable biological balance in an aquarium requires expertise and regular work by the parents, while children may quickly lose interest.*

*My revised recommendation table*

| Animal | My rating | Why? (the reality with ages 3 and 5) |
|---|---|---|
| Adult, calm cat | ★★★★☆ | Better than its reputation, provided the family has experience with cats. Cats can withdraw to elevated spaces when it becomes too much, and children can learn to respect their body language. |
| Guinea pigs | ★★★☆☆ | Suitable only mainly as animals to observe. If parents clean the enclosure and children merely offer pieces of cucumber, it can work. Not suitable for cuddling. |
| Rabbits | ★★☆☆☆ | Need a great deal of space (at least 4–6 $m^2$ permanently, not a small cage) and are demanding to keep. Not cuddly animals. |
| Fish | ★★☆☆☆ | Safe, but provide too little interaction for children of this age. All the work remains with the parents. |
| Birds / hamsters | ★☆☆☆☆ | Unsuitable. Either too sensitive to stress in noisy children's environments or nocturnal and defensive. |

*Summary conclusion: There is hardly a perfect solution for the Müller family in this list. If the parents genuinely want an animal themselves and are willing to take on the work, an older, very calm cat may often be the best choice. If they are looking for an uncomplicated "beginner pet" for the children to cuddle, they should probably wait another three or four years.*

During exploration and clarification of the topic, collaborative work processes are prepared so that the anchor can be developed in greater depth, small groups can be formed, unresolved questions can be revisited, and additional questions can be clarified. In this phase, the coaching function of the teacher is particularly important for making necessary delimitations and formulating the small groups' tasks together with the students. This should not restrict the groups' scope for action from the outset. Rather, the teacher's experience should help make the artifacts, understood as knowledge constructs, more workable. It is also important that the work of the small groups remain transparent and be continuously related back to the overall problem of the project.

For the subsequent elaboration phase, small groups of two or three students are formed to implement the work plan agreed in the previous phase. In addition to expanding information on individual aspects of keeping pets, the groups focus particularly on testing the robustness and evidential basis of the existing information concerning the conceptual artifact "pets."

In the present WebQuest, this could mean:

- Surveying parents about which pets they regard as more or less child-friendly.
- Comparing the AI responses with Internet advice or parenting guides on keeping pets in the family.
- Asking a pet shop which pets staff would recommend.

- Analyzing statistics on pet ownership.
- Investigating the legal situation of tenants when landlords prohibit pets.
- Exploring additional questions such as species-appropriate food for cats and dogs, pet insurance, dog training, and so on.

At the end of the WebQuest, the results of the group work are brought together in a whole-class session. The individual groups present their findings and relate them to the shared state of knowledge established after the topic was introduced. They explain what new insights have emerged from their perspective compared with the earlier state of work. This includes questions such as:

- Which aspects originally introduced by the AI assistants were confirmed?
- Which claims could not be confirmed through the group's work?
- What new insights or results follow from this, and what needs to be taken into account when reformulating the anchor concepts?
- Which questions remain open and should be addressed in future projects on this topic?

Finally, the results of the WebQuest are condensed in a summary—for example, in final texts, a summary video, visual diagrams, tables, or other formats.

## Conclusion

To conclude this introduction to WebQuest 2.0, I want once again to highlight what has changed through the integration of AI assistants into school-based work with the Internet, especially with regard to the search for information and knowledge. This applies not only to WebQuests but to all contexts in which work with "prompts" replaces conventional searches based on keywords and links. Curated searching of Internet pages loses importance when research is delegated to AI assistants that draw on generative Large Language Models (LLMs).

This does not mean, however, that artificial intelligence will surpass human intelligence within a few years, as some voices from the technology sector predict. The probabilistic approach of AI models makes hallucinations systemic and can also result in the failure to recognize fake news. This means that the evaluation of knowledge by real human beings remains essential. Students must therefore learn to engage critically with AI systems and must not be misled by the consistently encouraging and positive tone that often prevails in dialogue with AI assistants.

They also need to recognize that this tone is connected to an attention economy whose built-in drive toward monetization seeks to keep users engaged for as long as possible. Algorithms can lead to content being optimized for "clickability" and time spent rather than for depth of truth.

In other words, knowledge work is hybrid: human intelligence is combined with technical AI (see also Sulaeman, 2026). The aim is not simply for users to learn how to formulate instructions to their assistants in such a way that comprehensive objectivity about our world can be produced at the press of a button. Rather, human beings remain the actual creators in working with cognitive artifacts, while AI assistants remain limited to the role of co-creators. They may become increasingly indispensable for knowledge work, but they must not come to dominate these processes as a new form of power—and certainly must not replace human intelligence.

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