

Online learning: constructivism and conversation as an approach to learning

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Traditionally our UK higher education establishments have majored on a lecturer instructing a group of students. The focus has been very much on transferring a body of knowledge to a set of learners using a variety of teaching methods. The target in many establishments has been on the individual learner and their performance. Conversation, when used was a means of clarifying the learning that had been set by the teacher. With the advent of online teaching and learning this mould might be challenged. Can we develop another approach? This article looks at some of the ways in which the design and practices of Talk 2 Learn, an online community, may reflect the thinking of Wenger and Vygotsky. It also begins to explore through the Talk 2 Learn example why it can be a useful addition to the traditional UK higher education models of learning.

Talk 2 Learn

Talk 2 Learn began early in 2000 with 1200 newly appointed headteachers as a pilot project known as Talking Heads. The ultimate goal for the Department for Education and Skills (DfES) who funded this was to use new technology to help with school improvement and the raising of academic standards. The membership of the online communities was extended to all headteachers and then aspiring headteachers involved in the National Professional Qualification for Headship, and later other school leaders, including school bursars. Recently, there were numerous sub-communities with memberships ranging from 24,000 plus to smaller communities of only four or five members. Ultralab, who developed the initiative, handed over all day-to-day running to the National College at the end of 2003.

Will the real Vygotsky please stand up?

According to the *Talking Heads: two year reflections* report (Allen *et al.*, 2002), the original philosophy behind the development of Talk 2 Learn was based on cognitive interactionist thinking, particularly Vygotsky (1934) and his notion of the Zone of Proximal Development (Figure 1).

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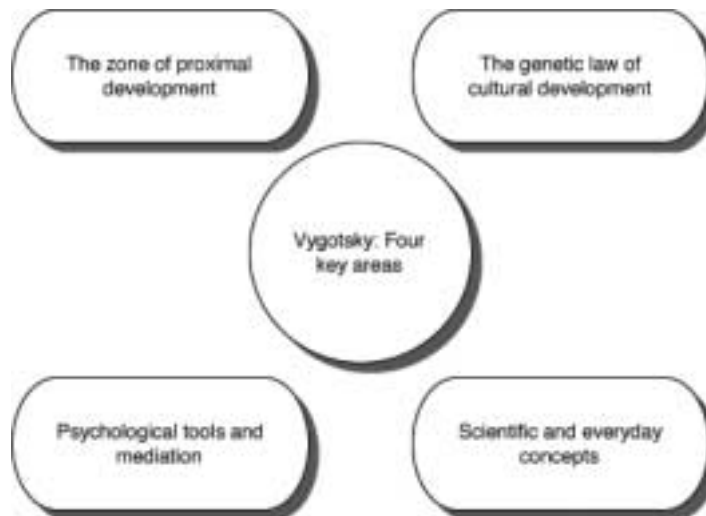


Figure 1. The zone of proximal development

One difficulty we immediately face with this statement is identifying what is meant by Vygotsky. Daniels (1996) argues that the Vygotskies who are being created in the 1990s in the West as well as in post-Soviet Russia are diverse and must be seen in their own cultural context.

Having said this it may be possible to identify a number of strands of Vygotskian thinking that may be relevant to Talk 2 Learn issues.

Vygotsky defines the zone of proximal development as:

The distance between a child's actual developmental level as determined by independent problem solving and the higher level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers. (Vygotsky, 1978, p. 86)

There are different ways we can interpret the zone of proximal development. Bruner (1966) advocates a scaffolding position. He argues that instruction should have its object to make the learner or problem solver self-sufficient. If information is to be used effectively, he reasons, it must be translated into the learner's way of attempting to solve a problem. Bigge and Shermis (1999) consider a first component of scaffolding is the engagement of children in interesting, culturally meaningful collaborative problem-solving activities. Another aspect they consider important is intersubjectivity. In other words, two or more participants begin a task with different understandings but arrive at a constructive shared one. The scaffolding interpretation has inspired pedagogical approaches that explicitly provide support for the initial performance of tasks to be later performed without assistance (Lave & Wenger, 1991).

Davydov and Markova (1983) would use a cultural interpretation of the zone of proximal development. This is based on another important idea of Vygotsky, namely the distinction between scientific and everyday concepts. Thus the zone of proximal development is the distance between understood knowledge as provided by instruction, and active knowledge, as owned by individuals.

A third view takes a collectivist or societal perspective. Engestrom (1987) defines the zone of proximal development as the distance between the everyday actions of individuals and the historically new form of the society activity that can be collectively generated as a solution to the double bind potentially embedded in everyday actions. This interpretation tends to move learning beyond the context of pedagogical structuring into a process of social transformation.

Returning to the *Talking Heads: two year reflections* report (Allen *et al.*, 2002), another key writer influencing the design of Talk 2 Learn has been Wenger (1998). Wenger would consider himself to be an exponent of the cognitive theories of learning. For him learning is a focus on the internal cognitive structures and how these are transformed. The pedagogical focus is on the processing and transmission of information through communication, explanation, recombination, contrast, inference, and problem solving. He would argue the cognitive theories of learning are useful for designing sequences of conceptual material that build upon existing information structures (Anderson, 1983; Wenger, 1987; Hutchins, 1995).

He would also subscribe to activity theories that move away from an exclusively psychological approach. In citing Vygotsky, in this context, he describes him as having a different focus from his own. Activity theories focus on the structure of activities as historically constituted entities. Their pedagogical focus is on bridging the gap between the historical state of an activity and the developmental stage of a person with respect to that activity—for instance, the gap between the current state of a language and a child's ability to speak that language. The purpose is to define a zone of proximal development in which learners who receive help can perform an activity they would not be able to perform by themselves (Vygotsky, 1934; Wertsch, 1985; Engestrom, 1987).

Synthesising the writers we have looked at under the heading of the key concept of the zone of proximal development, the following features emerge that may apply to an online community. The zone of proximal development is about problem solving that arises from people with different understandings constructing a shared understanding. The creation of this 'understood knowledge' (scientific concepts) arises from 'active knowledge' (everyday concepts) as owned by individuals. A society or community is formed that generates solutions to problems found in the everyday lives of the individual members. Wenger begins to expand on the problem-solving process by emphasising the processing and transmission of information between group members through communication, explanation, recombination, contrast and reference.

Unlike a traditional web site, which emphasises the organisation of material and resources, Talk 2 Learn majors on the organisation of people into various groupings known as communities. Each community can be private and only seen by its members. The membership can be a community of one or ranging up to many thousands. The members of the community negotiate meaning over a variety of professional issues and initiatives they are facing.

Talk 2 Learn communities often do not follow a set programme or set of learning outcomes. The members meet together for common purposes. Often this is to support members in the day-to-day problems they face. Members share different viewpoints and perspectives and come to a better understanding of issues through discussion and debate. Community members are encouraged to set the agenda that is relevant to them. They are encouraged to use the software to create and publish items and to take as much responsibility for the running of the communities as they are willing and have the time to do. Facilitators provide scaffolding for discussion and support community members especially in the early stages of membership.

On one occasion a headteacher had admitted a child into his school one Monday morning. Such was the child's behaviour the headteacher was seriously considering excluding the child by the Wednesday of that week. He presented his problem to an online community of headteachers. Thus he was taking an issue that was of immediate relevance to himself and involving others in dialogue seeking to find answers to his problem. Collectively the group generated a number of strategies for dealing with the child. The result was that the child was not excluded from the school and became an established and successful pupil within his class. Moreover, out of the online discussion a list of suggestions was generated that became useful to other community members. Thus active knowledge (everyday concepts) became transformed within this community activity into understood knowledge (scientific concepts).

The genetic law of cultural development

This theorises the social in connection with the psychological. Vygotsky says,

Any function in the child's cultural development appears twice, or on two planes. First it appears on the social plane, and then on the psychological plane. First it appears between people as an interpsychological category, and then within the child as an intrapsychological category. (Vygotsky, 1981a, p. 163)

In other words, Vygotsky argued that the higher voluntary forms of human behaviour have their roots in social interaction, in the individual's participation in social behaviours (Minick, 1987). This was so central to Vygotsky's thinking that he sought to analyse mental functioning in the individual by going outside of the individual (Wertsch & Tulviste, 1992).

One of Vygotsky's students and colleagues expressed the position thus:

In order to explain the highly complex forms of human consciousness one must go beyond the human organism. One must seek the origins of conscious activity ... in the external processes of social life, in the social and historical forms of human existence. (Luria, 1981, p. 25)

Wenger considers learning to be taking place more often outside a traditional setting, such as a school, than in it. He would define the setting in which much learning takes place as a community of practice. We may well see an echo here of Vygotsky's everyday concepts. Since the beginning of history, human beings have formed communities that accumulate collective learning into social practices. Such communities do not take knowledge in their speciality to be an object; it is a living part of their practice even when they document it. Knowing is an act of participation.

Practice is, first and foremost, a process by which we can experience the world and our engagement with it as meaningful. Wenger stipulates that authors who are not avowed practice theorists but whose theories do address related issues have influenced his understanding of the concept of practice. Of the 10 he lists, Vygotsky is included with the focus being engagement in social activity as the foundation for high-level functioning. In Wenger's definition of practice, he would suggest that it is not necessary to account for the reproduction of practice with a separate mechanism, such as transmission, imitation or even internalisation (Vygotsky, 1934; Parsons, 1962; Bandura, 1977).

Wenger uses the concept of identity to focus on the person without assuming the individual self as a point of departures. Building an identity consists of negotiating the meanings of our

experience of membership in social communities. The concept of identity serves as a pivot between the social and the individual, so that each can be talked about in terms of the other.

Talking about identity in social terms is not denying individuality but viewing the very definition of individuality as something that is part of the practices of specific communities. It is therefore a mistaken dichotomy to wonder whether the unit of analysis of identity should be the community or the person. The focus must be on the process of their mutual constitution.

In everyday life it is difficult—and, I would argue, largely unnecessary—to tell where the sphere of the individual ends and the sphere of the collective begins. (Wenger, 1998, p. 146)

The nature of social groupings is a key feature for both Vygotsky and Wenger. Perhaps we need to review our focus on learning being essentially an individual process within our higher education establishments. The Genetic Law of Cultural Development would indicate that the make up of learning groups and an emphasis on the interaction of learners with one another is a key to successful individual learning.

One of distinguishing features of the Talk 2 Learn software from email listings and online discussion groups is its ability to organise into communities in a wide variety of ways. It is very easy to set up new groupings and sub-groupings. Even with large numbers of people it is easy to see who is a member of which group. Clicking on a member's name gives the opportunity for one-to-one communication as well as to the whole group.

The Talk 2 Learn communities start out as blank spaces and members are given a number of online tools to raise issues and conduct discussions of their own choosing. Various communities began with members from a common background or wishing to discuss a common issue. Learning is not envisaged as being explicit or structured in any formal way. Nor are there any clear distinctions between teachers and learners. Community members participating in real situations that are relevant to community users construct knowledge.

So, for example, a small group of heads working in schools in a small town decided to set up a Talk 2 Learn community which they accessed daily. They would have normally only had limited contact with one another. In this they were able to raise issues that occurred in their school and find not only support but a wealth of collective knowledge and experience. Again when these schools faced a new Government initiative they were able to work together on applying this into their various situations. Whilst they already had a strong sense of social identity, their engagement with the online community added another depth to this. In a very real sense these heads have developed a community of practice. They have a mutual engagement wherein they understand and tune their enterprise, and in the processes of this develop their styles and discourses.

Psychological tools and mediation

Psychological tools are elements of culture developed by human beings for the mastery of one's own mental processes. The sign is one of the most important psychological tools, for the sign system (speech) makes possible the transition from interpsychological to the intrapsychological (Hood Holzman, 1985). Vygotsky distinguishes between two types of tools: the technical and the psychological.

The most essential feature distinguishing the psychological tool from the technical tool is that it directs the mind and behaviour whereas the technical tool, which is also inserted as an intermediate link between human activity and the external object, is directed toward producing one or other set of changes in the object itself (Vygotsky, 1981b, p. 140).

The psychological tools, Vygotsky felt, were fashioned by people solely for the purpose of manipulating the world and, thereby, the behaviour the world elicits from us. Thus the relation between world and subject is constantly mediated by psychological tools (Bakhurst, 1990).

Talk 2 Learn makes use of a number of online tools. In looking at Talk 2 Learn tools it is important to make clear how these tools correspond to Vygotsky's use of the term tools. The online tools correspond to Vygotsky's technological tools, which provide the media whereby the psychological tools can operate. The way the Talk 2 Learn tools are used, the language contained within their use and the nature of interaction between people using the Talk 2 learn tools would correspond to Vygotsky's psychological tools. In order to study the use of psychological tools within Talk 2 Learn the focus needs to be on the way people use the Talk 2 Learn tools, particularly in the way language is used within the Talk 2 Learn tools.

For Wenger (1998), practice is about meaning as an experience of everyday life. Wenger postulates that meaning is located in a process, which he labels the 'negotiation of meaning'.

I will use the concept of negotiation of meaning very generally to characterise the process by which we experience the world and our engagement in it as meaningful. (Wenger, 1998)

He would say that the negotiation of meaning may involve language, but is not limited to it. For Wenger, living meaningfully implies an active process of producing meaning that is both dynamic and historic.

Table 1. Talk 2 Learn online tools

Article	This enables community members to make a written statement that can also include a picture. It is not designed to be interacted with by other users directly.
Brainstorm	A tool that allows for anonymous contributions upon a set question or theme. The contributions can be made in a non-linear fashion and can also be voted upon.
Conversation	Contributions are attributed to each community member who engages in the conversation and occur in a linear fashion with the most recent contribution at the bottom.
Debate	Similar to the conversation but allows contributors to make comments from up to five set positions, each position being a different colour.
Hotseat	A question and answer tool that can be used either with an 'expert' answering the questions posed by others or in a more open way with set questions being answered by many.
File	Uploading and downloading computer-based resources enabling the sharing of documents between community members.
List	Constructing hyperlinked lists to community web pages or pages external to Talk 2 Learn on the World Wide Web.
Image	Using and modifying uploaded images.
Audio	An audio multimedia tool.
Video	A way of including digital video within a community.
Page	Creating additional pages on which to publish items created.

One of our greatest learning and teaching tools within higher education is language. By this we mean genuine dialogue not monologue. The varied use of language within a number of different conversational contexts can only be an asset to learning. The time spent in active group conversation is well worth the loss of some opportunity for the teacher to speak at the class.

The Talk 2 Learn software gives users a wide variety of tools in order to communicate with other community members. The online tools include those shown in Table 1.

There have been a lot of government initiatives faced by schools in recent years. One of the more problematic has been performance-related pay. Headteachers faced with the task of applying this legislation to their staff and schools used the hotseat tool to discuss with senior DfES officials the practicalities of doing this. Language was used to negotiate the meaning of this legislation in terms of what it meant in headteachers' schools.

Scientific and everyday concepts

In chapters 5 and 6 of *Thought and language*, Vygotsky (1934) drew a distinction between scientific and everyday concepts. Vygotsky distinguished two forms of experience that gave rise to two different, albeit interrelated, groups of concepts. The first group, which Vygotsky designated as scientific, has its roots in specialised and operationalised educational instructional activity that imposes scientifically defined concepts upon a child. The second group, which comprises concepts emerging from the child's reflection upon everyday experience, was called spontaneous (Kozulin, 1986).

Shif (1935), under the supervision of Vygotsky, found that the development of scientific concepts appeared to precede the development of everyday concepts. For Vygotsky the essential property of scientific concepts is their structure. Because of this Ivic (1989) argues that education cannot be reduced to the acquisition of a body of information.

If all we are seeking to impart to our students within the UK higher education scene is the acquisition of a body of knowledge then we may miss the point of the scientific concept. The structure of knowledge in terms of its social setting, its varied applications, can best be learnt in a setting where conversation is used to emphasise these elements.

The learning that takes place within a Talk 2 Learn community takes place within the context of the interaction between members of a social grouping. Talk 2 Learn takes learning out of the traditional teacher–student setting. In many ways its emphasis is to negotiate everyday concepts. The traditional UK higher education approach may be a stronger approach for developing an understanding of scientific concepts. In Talk 2 Learn the everyday is the starting point for conversation which over three years has generated a body of formalised knowledge. This knowledge is within a setting, a context out of which it is possible to extract useful information, but taking it out of its setting can mean that its value is decreased.

A number of Talk 2 Learn members who had a particular interest in Special Educational Needs had worked on some strategies for identifying and helping children with a particular need. They were gratified when asked if their work could be published to a wider audience. When this happened they were very disappointed at the result. This was because their everyday knowledge did not transfer well into a presentation that was designed primarily to convey scientific knowledge.

Conclusion

Talk 2 Learn is essentially a piece of software. In terms of an approach to learning in many ways it is neutral. The way it is used may well be of greater importance to the teaching approach rather than its intrinsic design. Nevertheless, its emphasis on community groupings makes it useful for those who wish to pursue a Constructivist approach to learning and teaching.

Boettcher and Conrad (1999) suggest there are three types of online courses. These are web courses which present material with little or no interaction, web-enhanced courses consisting of a hybrid of face-to-face and online, and web-centric which are interactive courses conducted exclusively using a course site. It may well be that the Talk 2 Learn software can be used in each of the three ways indicated here. However, frequently the Talk 2 Learn software is used in another way as well. This is not in an explicit course over a set period of time but rather a grouping of learners who decide what they want to discuss, and when and how they want to discuss the issues that they have raised. Learning is implicit rather than explicit.

Bigge and Shermis (1999) would argue that behaviourism makes the assumption that human beings are passive or reactive and cognitive interactionists make the assumption that human beings are interactive. The behaviourist tends to want to design programmes of stimulus to elicit a series of responses. Accordingly, the learning process consists of impressions of new reaction patterns on pliable, passive organisms. Learning arises, in some way, from the impingement of environment on organisms. It may well be that the web courses which present material with little or no interaction suit the underlying behaviourist philosophy more than the other types.

The hybrid and web-centric course encourage a variety of interaction from the participants with the tutor fulfilling more of a facilitation role than a tutor. These approaches lean more towards the cognitive interactionist philosophy. Wenger and Vygotsky both emphasise the importance of individuals interacting with their environment/communities in the learning process.

Mayes (2001) argues that before adopting any new educational technology we should first clarify the pedagogical basis on which we wish to proceed. He also argues that the emerging pedagogical consensus is around Constructivism. By this he means collaborative learning, authentic tasks, reflection and dialogue, and the promotion of identities and learning communities. This again would appear to agree with elements of both Vygotsky and Wenger's thinking.

Talk 2 Learn may well be a useful addition to traditional UK higher education approaches if used in a way that emphasises the four Constructivist concepts highlighted above. In using Talk 2 Learn to form communities of practice learning can be ongoing and lifelong. This suits many practitioners who have benefitted from a more traditional approach but who now have very demanding full-time jobs.

Learning can also be applied directly to the real world in which the learners are involved. This enables them to solve problems they are immediately facing and places an emphasis on everyday knowledge.

Notes on contributor

Ken Allen has had 30 years of experience in education which have included 12 years teaching in inner-city Liverpool. As a headteacher for 13 years, he successfully established a new school following the amalgamation of two schools in the then poorest local area in Europe.

This was followed by five years researching learning and technology, mainly amongst adult learners. Currently, Ken is researching and delivering a totally online research-based degree course for mature undergraduate students.

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