ABSTRACT

Distance education has evolved so much in terms of territorial multipolarity, wider variety of course offerings, and higher-quality multimedia resources and personnel expertise. Opting for this type of education has allowed for its institutionalization on a large scale and consequent diffusion of knowledge without attending on-campus classes. Distance education emphasizes the role of the tutor, the management of tutoring, and the need for network-sharing the teaching materials produced and methods for structuring and administratively organizing the various types of schools offering distance education. In that regard, the purpose of this article is to analyze the importance of tutors, their conceptual evolution, tutoring management, and sharing of teaching materials produced in accordance with the management methods through a shared network, considering distance education has been improving its virtual learning environments. To do that, we used a theoretical, interpretative approach to the reference reality and particularly focused on how the sharing of the various materials offered to tutors is managed. Thus, we hope to contribute to discussions about multimedia technological resources, personnel training, and continuously-improving teaching materials that make the distance education program a specific programmatic or institutional modality at attendance-based institutions.

Keywords: Tutoring. Virtual environments. Network sharing.

RESUMEN

La educación a distancia ha evolucionado tanto en el sentido de la multipolaridad territorial, como en la gran variedad de ofertas de cursos, en la cualificación de los recursos multimedia y en la especialización personal. La opción por esa modalidad de enseñanza ha permitido su inserción institucional en amplia escala y la consecuente difusión del conocimiento no presencial. En esa modalidad, se destaca el rol del tutor, la gerencia de la tutoría y la necesidad de compartir en la red el material pedagógico elaborado y los métodos de estructuración y organización administrativa en las diferentes categorías institucionales que ofrecen la modalidad de educación a distancia. En ese sentido, el objetivo de este artículo es analizar la importancia del tutor,

DIALECTIC OF MENTORING: KNOWLEDGE DISTANCE, MANAGEMENT AND SHARING IN NETWORK

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INTRODUCTION

Over the past few decades, Brazil in particular has seen a great expansion in education beyond face-to-face classes. Given the country’s massive size, its several natural, social, and cultural differences made it paramount to build an education form capable of catering to people in remote areas.

Distance education brought the ability to take knowledge and technical training to areas that lacked brick-and-mortar schools and qualified teachers.

At first, the teaching and learning process would take place slowly as it depended on technological tools that became available as knowledge, science, and technology advanced. On the other hand, it took quite a while for distance education to become an important source of technical training for the sections of the population who had trouble traveling to face-to-face schools.

Distance education was given a boost after it was included in the Brazilian Law of Education Guidelines and Bases as a practice to be put in place under public policies dedicated to education and the institutionalization of programs such as the UAB (Universidade Aberta do Brasil). Advances in information and communication multimedia expanded its reach in the country through the growing participation of federal universities, federal technology institutes, and private universities as well.

Today we find distance education institutionalized at various stages of education. In many cases, it encompasses a wide variety of technical, undergraduate, and graduate programs. The diversity and intensity of the DE process made way for a true method of education where the relationships between the involved agents were notably different from the traditional ones seen in classroom-based education.

Disseminating gradually to nearer and farther areas as the reach of and funding by policies dedicated to the technical improvement of the involved populations increased, distance education has gained momentum. However, the success of this method of education as it evolves and improves depends on qualified personnel, proper connectivity between technological tools, and professional specialization.

Professional specialization, particularly in the field of education, brings on the permanent clash between realities which are constantly being renewed. As educators specialize and renew their knowledge-relaying practice, they take on the main role in the communities’ cultural enhancement. It should be kept in mind that education is the primary basis for the construction of nationality and social awareness and harmony. Therefore, it must be a priority when public policy is designed.

Distance education allows for knowledge to be disseminated to distant areas plagued by
social inequalities. In fact, it allows people to climb the social ladder through knowledge and technical training. “Carried out through public initiatives, people’s continuous training will extend life values’ in the plurality of social spaces,” in Vieira & Vieira (2007, p. 148).

However, the credibility of education quality was paramount for the value of distance education to be acknowledged. Such quality depended on more than just virtual environments using proper technologies. It depended primarily on the training of teachers specifically prepared to handle the forms of knowledge and use the technical tools. “As DE advanced, new professional figures emerged in teaching. In this backdrop, the teaching-learning relationship includes tutors, for instance” (MILL, et. al., 2008, p.113).

This cause and effect relationship is natural in the field of education. Whenever knowledge advances, it does so because of an expansion in human cognitive capabilities. In that regard, the horizon for teaching practice improvements opens up while, on the other hand, the need for innovation to the technologies used as information and communication media emerges.

Today, we have come to a new milestone in the evolution of knowledge and creation of technologies, especially in terms of multimedia, which are essential to enhance the quality of distance education. These circumstances lead to the introduction of new ways for training human resources to perform activities related to the complex setting up of virtual environments.

In the field of global, economic, financial, intellectual, and cultural realities, a connective identity is formed in technological interaction environments. It is a new, tangible and intangible reality through which the flows of command, business, behavior and language patterns, and meanings run. Multimedia technologies allow for this interactive stage of material and virtual action to develop along the evolution of classroom-based and distance education platforms.

As an important knowledge-disseminating tool, distance education must be qualitatively equivalent to face-to-face education. Their goals, social reach, and top priority status for national development are the same. Although the structure, organization, and personnel and material conditions of classroom-based education are well-established in the teaching tradition, today distance education has become an integral part of various types of schools. Not as an appendix or complement, though. It is part of the organizational structure, goals, and targets set for the academic field.

There is a convergence between the two methods of education which is dictated by the need for more in-depth knowledge. Meeting such need requires faculty and support staff improvement and advances in technological tools. This situation has been increasingly found at all schools offering classroom-based and distance programs.

In Brazil, despite the significant shortage in the generation of new scientific/technological knowledge, we see an emphasis on disseminating technical training to obtain skilled labor for the country’s development. That is why distance education has been branching out its offer of programs in the Brazilian education process.

Now as part of the academic structure at federal universities, federal institutes, and private schools, distance education requires a boost to the special training of its personnel, such as in the case of tutors, and shared management of tutoring.

**METHODOLOGICAL ASPECTS**

This study was conducted following a theoretical methodology to interpret the referenced
The evolution of mankind, civilizations, and organized societies, and the faster or slower pace of their economic, social, and cultural development is a product of man's ability to create and advance forms of knowledge.

In today's society, the global space is a complex, dominant order that works systematically. Internally, each national society faces the paramount need to achieve development levels compatible with the global order. In the cases of very large countries, such as Brazil, there is a growing and pressing demand for mechanisms to educate populations living in underprivileged areas.

The development of cognitive structures is conditioned to the level of involvement found in the relationship between the natural and social in the different communities. This relationship tends to break as the ever-expanding development progresses while focused on some form of production. The new knowledge that accompanies the advances in production then pushes human resources to pursue technical training. Because of local conditions, scale, and lack of funds, it is not always possible to set up schools following the traditional platforms found in more populated urban areas.

Distance education has become a suitable tool for boosting development and providing the required human resources. The quality of distance education disseminating hubs has been ensured by the advances in information technologies.

“The information society is built on the paradigm of knowledge and information. The new social organization stemming from such paradigm is firmly upheld by the use of the techniques it is equipped with” (VIEIRA; VIEIRA, 2004, p. 99). Therefore, knowledge, information, and technology become viable in distance education as long as the operating human resources are continuously trained.

Training populations living in different areas to enhance the quality of human reality, particularly focusing on the management of sharing the various materials offered to the tutorial backdrop. The interpretative approach is backed by the schools' structural and organizational functionality. Gioia and Pitre (1990) list a few interpretative characteristics such as the diagnosis and conversion of the social construction of reality into an analytic and comprehension-oriented process.

The phenomenological character adopted in the method was meant to find relationship patterns, overlaps, and meaning (Creswell, 1994). According to Triviños (1987), the phenomenology seeks to establish widely valid inter-subjective knowledge, which in the case studied may encompass a universalized management plan.

The adopted method places great value in the institutional management process and considers management organization a systemic requisite for the actual practice and quality of distance education.

Furthermore, this paper somewhat expands the discussions about the research project that presented integration and collective intelligence proposals for Rede e-Tec Brasil and which allow information and knowledge to be collaboratively produced, stored, shared, and used.

Rede e-Tec Brasil is a network put together by the Brazilian Ministry of Education (MEC) to encourage online technical programs and which provides instructions and guidelines related to the financial support for teacher training at federal education, science, and technology institutes. In fact, the network's mission is to expand the offer of technical and professional distance education via free programs technically and financially backed by MEC.

DISTANCE EDUCATION

The evolution of mankind, civilizations, and organized societies, and the faster or slower pace of their economic, social, and cultural development is a product of man's ability to create and advance forms of knowledge.
resources required for nationwide equitable development is the top priority that must be set by public policies. It is the educational strategies dedicated to Brazilians’ continued training which will impact the whole of the nation through the technical performances in the country’s diverse social spaces.

The paradigms of efficiency and innovation prevail in our national development. This evidence leads to improvements to the concept of education, which is seen from a dynamic, innovative standpoint. “Education is the fundamental catalyst of human development. It is education which guarantees the meaning of life and the social conscience’s values” (VIEIRA; VIEIRA, 2007, p.148).

In a society of different values, deep-seated traditions, and resistance to change, there is a more pressing need to imbue it with the new paradigms that steer the arrangement of modern life.

Over the past ten years, distance education has evolved to new teaching/learning environments. Unlike before, DE is no longer about bridging spatial distances where students’ mobility was compromised by physical and social variables. Today, several institutions offer DE programs not necessarily on account of distance but because of students’ availability in terms of hours and places which are more favorable for them to train in their chosen fields.

Necessity is taking basic, technical, and expert knowledge beyond the more densely populated centers, thereby decentralizing knowledge in cities furnished with schools.

Current generations, and future ones especially, will face a scenario of occupations that is quite different the one seen in the recent past. Strategic manufacturing plants have changed the profile of factories in operation just a few years ago. That is true both in terms of total production and the use of increasingly more specialized labor. High technology requires increasingly more sophisticated specialization. Therefore, for youngsters to fit into this new model of occupation they need fresh knowledge corresponding with the job market demands.

On the other hand, services and enterprising initiatives suit these new circumstances. Therefore, technology becomes a decisive agent of change to work methods and organization models. In short, of change to people’s individual and collective lives.

CONCEPTUAL EVOLUTION OF TUTOR AND TUTORING MANAGEMENT

Distance education has been enhancing its virtual learning environments. Hub-supporting brick-and-mortar facilities, multimedia technology resources, education personnel training, and continuously improving study materials make DE courses a specific or program-related education approach at classroom-based schools.

Given the core target of this study, our analysis focuses on the importance of tutors, conceptual evolution, tutoring management, sharing of the study materials produced, and shared network-based management methods.

In any given education process, regardless of its kind, teachers are the center of educational action. They are the people qualified to relay and generate knowledge, people who are capable of unleashing students’ cognitive potential and enabling higher-order thinking skills (VIEIRA; VIEIRA, 2004).

In distance education, the teacher figure is identified in the term “tutor” and their field of action becomes tutoring. Many approaches refer to the DE tutor. They include teacher-tutor (MILL, et. al., 2007); online professor (BORBA et. al., 2007); virtual tutor (MILL; FIDALGO, 2007); academic
adviser (RODRIGUES; BARCIA, 2009); study adviser (ALONSO, 2000); advising professor, (MORON, 2008). Regardless of the title, tutors are the main agents of education and interact directly with students by advising the latter with respect to study materials and having constructive dialogue to advance basic, technical, and specialized training at the various levels of the distance education process.

Bearing age-old duties of tutelage, that is, protection and defense, in the field of education and as far back as the 15th century, tutors were assigned roles as religious and social behavior advisers at universities. It was only in the 20th century that tutors became academic advisors, which role has been incorporated into our current distance education programs (SÁ, 1998).

Nowadays, DE tutors are professionals accredited to teach and even deemed an essential agent when it comes to program quality.

In Referenciais de Qualidade para à Educação Superior a Distância (BRASIL, 2007), “tutors are an essential character in the educational process of distance higher education programs and part of schools’ more highly skilled personnel.” Therefore, in today’s distance education, tutors are qualified teachers specifically trained to perform duties that are also specific.

However, it should be noted that their related duties include setting up spaces for the collective construction of knowledge, select the literature meant to support the contents, answer questions via online discussion forums, take part in videoconferences, and carry out assessments, in addition to other duties the very advancement of distance education may create.

Setting up tutoring management parameters is paramount so that tutors may efficiently perform their duties. That means defining collaborative procedures capable of guiding tutors’ activities in virtual learning environments.

Tutors hold some specific teaching skills for distance education. Tutoring is a process, a set of procedures involving pedagogical diversities according to the programs offered by schools. As a complex of pedagogical actions, of technical and specialized training to be carried out in non face-to-face environments, tutoring requires its own management agenda.

Running distance education is teamwork that processes, guides, and evaluates certain strategies for student learning. Tutoring coordinators, distance tutors, face-to-face tutors, and technical support staff participate in the management process. As DE programs expand rapidly at several levels, “each institution seeks to build its tutoring model that meets local particularities and the proposed programs and courses” (PETRI, 1996).

Good tutor performance is built on the strategic management agenda, whose basic principles include: academic skills; technological skills; administrative and institutional skills; management skills. Institutionalized tutoring managers are tasked with ensuring these skills are exercised as tutors do their job. To that end, managers must have work principles set up and printed out to guide the standardization of certain teaching and learning activities in the virtual environments used in distance education.

As an organizational process responsible for the quality and efficiency of tutors’ activities, tutoring must be institutionalized in coordination that involves several requirements. These requirements include regular visits to face-to-face support hubs, monitoring of tutors’ work, and virtual meetings via videoconferences to pedagogically improve the programs.

Therefore, tutoring management is
carried out system-wide to connect the actors who surround the tutors. The offered programs’ quality depends on the interrelations which are set up by functionality rules and principles.

A tutoring plan must be put together beforehand. System-wise, emphasis is placed on monitoring activities carried out based on information recorded in the virtual learning environments following the procedural flows previously defined.

The tutoring plan and its corresponding management stand as a didactic-pedagogical instrument that provides greater safety to tutors’ work. Within their purview, tutors directly help design the tutoring plan systematized along with the tutoring management at each institution.

Evaluation is one of the main duties of tutoring management. In fact, program quality, tutor performance, and the support structure and organization depend essentially on the evaluation system in place. Several basic evaluation requisites should be mentioned with respect to tutor management. Tutors must be constantly present in the virtual environment because their interaction with students needs to remain close so as to avoid gaps in the regularity of the distance education process.

Tutors must also remain available to do other things that require their attendance at work meetings, in-depth analyses, reports, and constructive dialogue with coordinators at all times aimed at innovation, higher quality, and changes that may improve distance education.

Evaluations must provide evidence of tutors’ skills not only in terms of content mastery but also their willingness to participate in refresh courses and ability to expand their knowledge by keeping up with the latest literature.

Regarding tutoring management, there are a series of relevant indicators to guide the monitoring of tutors’ activities. Doing so makes it possible to monitor the activities carried out by tutors and assess each tutor’s individual work according to their respective fields. Below are some indicator suggestions:

**Chart 1: Tutor activity monitoring indicators**

<table>
<thead>
<tr>
<th>Activities</th>
<th>Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forums</td>
<td>Number of forums proposed</td>
</tr>
<tr>
<td></td>
<td>Duration</td>
</tr>
<tr>
<td></td>
<td>Number of interventions made</td>
</tr>
<tr>
<td>Chat room</td>
<td>Number of chats</td>
</tr>
<tr>
<td></td>
<td>Duration</td>
</tr>
<tr>
<td></td>
<td>Degree of tutor participation</td>
</tr>
<tr>
<td></td>
<td>Absences</td>
</tr>
<tr>
<td></td>
<td>Tardiness</td>
</tr>
<tr>
<td>Email sending and receiving</td>
<td>Number of emails received and sent by tutor</td>
</tr>
<tr>
<td></td>
<td>Time it took tutor to reply to each message</td>
</tr>
<tr>
<td>Reply to students</td>
<td>Time it took tutor to reply to students, via posting date and time</td>
</tr>
<tr>
<td>Assignment correction</td>
<td>Time it took tutor to begin correcting after assignments are handed in</td>
</tr>
<tr>
<td></td>
<td>Average, shortest and longest feedback time</td>
</tr>
<tr>
<td></td>
<td>Information posting and updating on the environment’s bulletin board</td>
</tr>
</tbody>
</table>
Tutoring management is aided by a set of support tools based on the use of information and communication technologies (forums, chat rooms, dialogues) and also all of the collaborative evaluation and construction tools (wikis, glossaries, books).

There is a connection between knowledge management and efficient tutoring system management. Experience has shown that practice communities are set up, that is, informal and interdisciplinary groups of people coming together to pursue a common interest.

The communities are self-organized to allow collaboration between people inside or outside the group. The communities provide the bond and the backdrop to facilitate the transfer of best practices and the access to experts, as well as allow for the reuse of models, knowledge, and lessons learned.

We should also mention mentoring, which is a work relationship between a more experienced member and a beginner; narratives, which are used when someone has some interesting knowledge to relay from their personal experience; knowledge portal, which makes use of the web to integrate corporate systems while ensuring data security and privacy; brick-and-mortar and virtual workplaces meant for sharing while knowledge is created; social media capable of widely disseminating information and knowledge.

**NETWORKED SHARING**

Our contemporary society bears a feature that sets it apart from previous ones. This is the society of economic, financial, social, cultural, and educational practices organized via a global network system that is highly interactive and full of new meaning.

The networks move flows directed at certain aims of human activity on various dimension, local, regional, and international scales. A knowledge- and learning-related practice is created in a spatial dimension and relayed to another, producing the reach of a goal or target. Specifically, knowledge transfers, technical training, and specialization are processed by distance education-oriented network systems.

In the diversity of academic institutions, the multi-polarity in the field of distance education leads to different formats of management methodologies. Management flows are unleashed representing several forms of operation and power.

Strategic networks comprise more than only economic and financial organizations. “They are also set up for social flows, backed by public policy, and capable of vitalizing the fundamentals of social upward movement: education and public health” (VIEIRA; VIEIRA, 2014, p. 114).

Classroom-based education uses the networks for inter-institutional interactivity, both nationally and internationally. In distance education, networks are the essential medium for achieving its goals.

However, the aspect that really must be highlighted is the need to network share the
materials produced by tutoring managers in each school. Making such materials available, originally as printouts or network shared virtual files, would represent a gain for tutoring management practices.

A tutoring management handbook on network use must contain standards and instructions regarding tutoring management. Parameters should be set for the Office of Basic Education (Secretaria de Educação Básica - SEB) and the National Fund for the Development of Education (Fundo Nacional de Desenvolvimento da Educação - FNDE) to put together a collaborative handbook which provided information on the activities carried out by tutors in virtual learning environments. The recruiting, selection, training, monitoring, and performance assessment methods and techniques would also be added value.

The purpose of putting together a collaborative construction proposal is to support managers, train and produce knowledge in collaboration, and share information and documents on study resources and materials.

In the meantime, it should be noted that the Ministry of Education, previously through the now-defunct Office of Distance Education (Secretaria de Educação à Distância - SEED) and currently through the SEB and FNDE, is tasked with playing the role of technological innovation agent in teaching and learning processes by fostering the incorporation of Information and Communication Technologies (ICT) and distance education techniques into teaching and study methods.

Therefore, the collaboration between program and tutoring coordinators when it comes to writing the handbook meant to meet the shared network's needs becomes relevant. The system would only stand to gain from tutoring managers’ participation and advice on the activities.

The experiences amassed by those who organize coordinators' work at the various institutions offering distance education have led to a stockpile of valuable material, particularly on tutoring management practices. Discussing and setting guidelines to put together the shared network supplying information meant to support the whole of distance education would be a valuable initiative not only in terms of sharing but also, in a subsidiary manner, of writing the handbook to be submitted to the SEB/MEC and FNDE.

Knowledge is a frontier open to people's cognitive skills. Enhanced by information, the human mind develops new ways of learning and basic, technological, and specialized education practices. In the interactive reality of our current times, there is no more room for compartmentalized knowledge, information, and communication.

Distance education needs to push back the borders of knowledge, training, and social inclusion through education. On the other hand, national development at the level of welfare for all can only be achieved to the extent of the population's qualification.

The urbanization phenomenon makes more densely populated centers the hubs radiating knowledge, innovation, and change. “Actually, there are two aspects found in our current times. On the one hand, the transnational aspect of economic activities, social relations, and global intelligence; on the other, the national aspect still in a slow process of change and insertion in the world order. These two aspects assign different functionalities to cities and urban zones” (VIEIRA; VIEIRA, 2014, p. 91).

Today, distance education has expanded to include cities of different sizes, to urban zones that include small communities.

In a quickly expanding education scene, all experiences must be provided via a shared
network where all those who are interested may find the social and professional skills in the structure and organization of tutoring coordination departments.

The foregoing would contribute to the entire distance education system by allowing for better team management and talent administration, fostering skills, and keeping operating groups interested. That way, the value of each experience would be highlighted based on the positive points taken from the adopted practices.

The handbook to be submitted to the SEB/MEC and FNDE will serve as a guide for all institutions already running distance education and those which may join this type of knowledge dissemination and young people’s specialized training, in keeping with certain local particularities.

**FINAL CONSIDERATIONS**

In the course of this paper, we followed a dialectic view of distance education for knowledge dissemination and learning practices for training a specialized workforce. Expanding knowledge across the country, regardless of the local population density, has become paramount for the national development and integration via education.

Distance education requires specific skills related to study programs, mastery of technology, and management methods to support teaching activities. Distance education finds its meaning in quality training capable of upholding a standard comparable to the one in place at classroom-based schools.

Admittedly, there is an ongoing mastery-related change in the horizon of human occupations. The ever-updated technologies, organizational structures, production strategies, and world-wide intellectual interactivity have been increasingly demanding new levels of qualification from the new generations. Their insertion into today’s widespread contemporaneity triggers the need for extensive personal training, usually along with specific specialization.

In the case of distance education, so the desired levels to its main goal may be reached, i.e. knowledge and technical training, there are countless variables to be considered, both from the standpoint of brick-and-mortar facilities and in terms of teaching personnel and technical support staff.

Particularly, tutor performance becomes more relevant, and so does pedagogical and management backend support, to ensure quality work is done. In addition to personal efforts and efforts by the surrounding team and tutor managers, there is an array of printed instruction and standardization materials available in virtual learning environments for tutor performance success. The rich experience institutions have been amassing over the past few decades through the practice of distance education inspires the idea for an information network-based sharing of the material produced and its degrees of compatibility in the various levels of distance education, considering local and regional differences.

Also to consider is the contribution to be provided to the SEB/MEC and FNDE regarding the preparation of a tutoring management handbook containing collaboration-related parameters and relevant information for tutors’ activities in virtual learning environments.

The proposal put forward in this paper with respect to the construction of a collaborative network of information on tutoring represents the interactivity of experiences about resources and materials used in the several distance education practices.

Knowledge and educational practices must represent an open frontier to not only
allow the media to be used as tools but also to primarily keep on expanding the students’ cognitive capabilities.

Knowledge parameters, information, communication, and learning practices in the field of distance education must be provided and shared via a network allowing searches that lead to improvements to distance education practices.

REFERENCES


