



Genesis of a Video Model for Initial Teacher Training Integrating Lesson Study and Neopass@ction Principles in Intercultural Bilingual Education. Ecuador

Silverio Jesús González-Téllez*¹  and Luis Alberto D'Aubeterre Alvarado¹ 

¹ Universidad Nacional de Educación, Azogues, Cañar, 030154, Ecuador

silverio.gonzalez@unae.edu.ec

Abstract. This paper analyzes the process of developing a public education policy to improve initial teacher training and its specific implementation through a video-based methodological strategy. This analysis takes place within the context of the establishment and consolidation of the National University of Education of Ecuador (UNAE-Ecuador), outlining its origins, principles, and specific advances. First, the institutional research background is presented, along with an assessment of the theoretical and methodological foundations that converged in its institutional creation. Second, the significance of the integration of its Pedagogical Model [1] is specified, which serves as the basis for completing this process with a video-based teacher training strategy based on Lesson Study principles [2] and the Course of Action approach of the Neopass program [3, 4].

Keywords: Lesson Study, Course of Action, Neopass@ction, Teacher video-based training, UNAE, Ecuador.

1 Introduction: The National Educational Transformation and Teacher Training Model

In 2015, a university dedicated exclusively to Education began operating in Ecuador as part of the State's educational policy: the National University of Education (UNAE). The Twentieth Provision of the Constitution of the Republic of Ecuador (2008) established its creation, and its organization and operation were designed in conjunction with the national educational policy and management bodies. The UNAE's Pedagogical Model [1] established the following foundational principles: 1) Current political and legal principles, which conceive of the teacher "...as one of the professionals with a high impact on technological and social innovation processes" p. 6. 2) Sociological principles that acknowledge the increasing complexity of social relations; 3) Epistemological principles of knowledge as a process and relationship, in terms of competencies or capacities; 4) Psychological principles related to learning as a construction, which teach us that "Learning is what we do when we don't know what to do" p. 9, fostering

Connectivism and Enactivism which posit the relational nature of knowledge. In the context of the digital society, these principles enable the expansion of connections among diverse perspectives and the externalization of these perspectives on platforms with high storage capacity.

Both the writing of the aforementioned model and its implementation were carried out in the first years of its development by Angel Perez Gomez, academic head of the governing body of the nascent university and a proponent of Lesson Study as a fundamental training strategy [1].

Although the operationalization of the initial broad approach was later adjusted and narrowed, this university has maintained its transformative Mission and Vision for the country's educational system, seeking to improve the quality of educational offerings by training better teachers.

1.1 National, Intercultural, and International Perspectives of UNAE

Another founding characteristic of the new university was its establishment on a national scale, as previously mentioned, with a main campus in a rural community in the province of Cañar (Chuquipata, Javier Loyola Parish) and a Support Center in Lago Agrio, province of Sucumbíos, in the Ecuadorian Amazon. This might seem paradoxical or contradictory, given the lack of a campus in the capital or a major city, but it signified a territorial, community-based, and intercultural prioritization of the educational renewal effort undertaken.

In parallel, work has been carried out from the perspective of international alliances and support, enabling a significant institutional academic leap. Several initiatives were undertaken in this regard, beginning with the formation of the Steering Committee, the institution's collective governing authority. This Commission was formed by prominent academics from Europe, the United States, and Ecuador: Joaquim Prats, Axel Didriksson, Helen Quinn, and Freddy Penafiel, with Angel Perez Gomez serving as academic chair and Freddy Alvarez Gonzalez as rector. All were convened to lead the institutional creation and the institution's first five years of development.

Following the same national and institutional policy in Ecuador, an invitation was extended through international academic networks to apply for university faculty positions. The aim was to attract specialists and researchers with doctorates and experience who could guarantee the competencies required for the ambitious educational undertaking. In this way, an experienced international faculty was formed, complemented by highly qualified young professors from the host country.

From another line of action, UNAE was invited by the University of Barcelona to participate in the European *ERASMUS* project "Towards Innovation" (To Inn: From Tradition to Innovation in Teacher Training Institutions, 2017-2019). This project brought together a network of leading teacher-training universities in Latin America and Europe. Its purpose was to conduct an inter-institutional assessment and evaluation of teacher training in order to promote innovation. The results and proposals were systematized, compared, discussed, and shared among the participants. This exchange also facilitated the production of collaborative publications and, in parallel, stimulated and contributed to the organization of a network of teacher training institutions in Latin

America (REDUCAR), which continues to operate today with ongoing annual activities.

In the context of the newly established university, and at the initiative of its first rector, Freddy Alvarez Gonzalez, seeking stronger international academic ties, a meeting was arranged with Luc Ria, director of the French Institute of Education (IFE), who at that time also held the UNESCO Chair in "Teacher Training for the 21st Century" (2012–2024). This meeting and subsequent efforts resulted in an inter-institutional co-operation agreement with the aforementioned French institute, and, furthermore, an invitation was extended to Luc Ria in July 2017 to present the advancements of the IFE's Neopass@ction video-based teacher training methodology at UNAE. For this purpose, UNAE professor Luis D'Aubeterre was called upon to coordinate and collaborate on this exchange and presentation by IFE director Luc Ria, who presented his teacher training proposal. This is how Ria visited the UNAE headquarters in Chuquipata and gave a seminar on video-based teacher training. In February 2018, D'Aubeterre was invited to the IFE in Lyon, where he received training in the Neopass@ction methodology.

These were important precedents for advancing innovative video-based teacher training and strengthening the Pedagogical Model through the convergence of Lesson Study, Enaction, Course of Action, and Neopass@ction at UNAE. These experiences enriched the teaching team and the emerging research line, which is described below.

1.2 Neopass Ecuador in Intercultural Bilingual Education (IBE)

Within this normative, epistemological, and pedagogical framework, the first Neopass@ction project at UNAE was launched. It involved monitoring, video recording, and analyzing the classes of regular teachers in the Intercultural Bilingual Education System at the "ABC" Intercultural Bilingual Community Education Center in the Saraguro Kichwa community of Tenta, Loja Province. This took place during the pre-professional practicum periods of UNAE students, during which the research professor supervised their development. Following the main guidelines of Neopass@ction, an experimental video platform for teacher training emerged, along with the publications that explain it [5, 6, 7].

2 Problem: Video-Based Teacher Training and Educational Innovation

With the COVID-19 pandemic lockdowns, the nascent university institution's new five-year period (2020-2025) arrived, marked by maturation and the definition of its objectives. Adapting to the pandemic situation influenced the development of three new UNAE projects within Neopass: 1) Neopass@ction: A video-based training methodology for improving teaching practice in Early Childhood Education [8]; 2) Neopas@ction: A collaborative video-based training experience for teacher professionalization in Ecuador [9]; 3) Continuation of Neopass@ction in Intercultural Bilingual Education (EIB), ABC School, with the participation of two new researchers (2019), in

addition to the principal investigator [6]. All of this allowed, in 2023, the promotion and approval of the institutional transfer of projects to the UNAE Teacher Training Technology Video Program, which integrates the various projects mentioned and ongoing inter-university initiatives.

The growing importance of video training was considered, with clearer integration into teacher training and on a larger scale. To this end, it was deemed important to address and clarify the following questions: Which convergence of principles from Lesson Study, Enaction, Course of Action, Neopass, and Connectivism would enhance video teacher training? How can advanced video teacher training at UNAE be redefined based on this trajectory? Answering these questions requires, as a first step, an assessment of the most current educational research.

3 Videos and Teacher Training: State of the Art and Theoretical Assumptions

The review presented here is based on two important recent studies, both of which propose meta-analyses and thematic analyses after reviewing hundreds of high-impact scientific publications related to the use of video in education and teacher training.

The first study of Monginho et al. [10], titled "Video technologies supporting collaborative learning and knowledge building in initial teacher education: A PRISMA-guided systematic review", employed the PRISMA methodology, adhering to strict inclusion and exclusion criteria for publications in specialized databases: ERIC (Education Resources Information Center), Web of Science, Scopus, and Google Scholar.

A total of 1,169 publications were identified; however, after applying all PRISMA phases, only 36 publications met the established criteria. A study of its content was conducted, identifying three main thematic categories: a) Video recordings for reflective practice that enhance collaborative learning by facilitating peer observation and feedback, thus promoting joint reflection on teaching methodologies and classroom management. b) Video-based content for knowledge building and resource dissemination, supporting knowledge development by providing access to diverse pedagogical strategies and enabling collaborative analysis of best practices. c) Live videoconferences for synchronous interaction, which directly promote collaborative learning through real-time discussions, joint problem-solving, and immediate feedback among teaching practitioners.

Turning to the empirical results, they find that: 1) During the first years (2000-2006) of the study period, no publications on the topic were observed. These publications began in 2007; therefore, they are included in the thematic analysis sample. 2) The 36 articles are distributed across 32 international academic journals, indicating a variety of publication channels, reflecting the shared interest in the topic across diverse contexts. 3) Furthermore, the 36 articles originate from 18 different countries, indicating a broad reception of the topic, ranging from the United States and Sweden, which lead the way, to Chile, and extending to Turkey and Taiwan. 4) The main topics of interest addressed were: 4.1. "Technological Innovation in Education," with 19 publications, emphasizing novel applications in educational media and support for teachers and

learning; 4.2. The application of video technologies in teacher-training environments to improve learning and assessment practices was addressed in 15 articles (4.3). Collaborative Learning and Knowledge Building. 4.4. Finally, the benefits and challenges of video technology are addressed in one publication. It is concluded that the most researched video modality among the publications examined was video recording (24 publications), used for self-assessment and collaborative reflection among educators, followed by content-based video (10 articles) and live video conferencing (2 articles).

Thus, although video recording is used in both training and collaborative research, this activity is hardly reported in the entire research by Monginho et al. [10], who state that: "...this systematic review reveals a notable gap in the literature: only one of the 36 studies explicitly integrates video technologies with both collaborative learning and knowledge-building frameworks. (...) Strengthening this connection is critical, as understanding how video technologies can be purposefully used to support these approaches would yield deeper insights for designing ITE programs that foster innovation, collective inquiry, and shared knowledge creation" p. 9.

The second study investigated, meanwhile, is Gaudin's [11] titled "Exploiting the use of video to train teachers: a theoretical-methodological framework based on a meta-synthesis of the specialized literature". This concise meta-synthesis of the specialized literature, spanning 2010 to 2023, included 22 literature reviews with meta-analyses and 17 reviews of theoretical frameworks and models of video use in teacher training. It concludes with a synthesis of the criteria for effectively leveraging video in teacher training. These are:

1. The viewer's perspective on the video: this is key to the outcome. It is not passive viewing but a "professional" one, involving interdependent processes of perception, interpretation, and projection.

2. The objectives of the viewing can be: knowledge acquisition, development of a professional perspective, improvement of practice implementation, or stimulation of professional motivation.

3. Types of video-confrontation with teaching practice and their progression: allo-confrontation (viewing another's practice), self-confrontation (viewing one's own practice), with a progressive sequence recommended to begin and then continue.

4. Criteria for selecting video content: these can be about recurring and common (typical) teaching situations or times, where it is easy to recognize oneself, and those related to difficult (critical) moments that are challenging. The literature recommends combining this content with self-confrontation interviews with the teacher about what they thought or felt at the time.

5. The importance of observing novice teachers, as it is often a challenge due to the superficial and judgmental nature of their observations. It is recommended to structure the viewing of what is observed beforehand and avoid saturation with repeated videos.

6. Attention to the human environment and feedback during viewing, as it can negatively influence the teacher, generating a defensive attitude. Whether due to insecurity or because the trainer's direction imposes a certain professional vision, it is important to allow for freedom of expression.

7. Evaluation of video-based teacher training. Most of the reviewed studies document positive impacts on motivation and cognition (beliefs, knowledge), but very little

research evidence exists on the actual impact on professional practice in the classroom or on students' direct learning. These are key issues for the strategy of video-based teacher training. Furthermore, the reviewed literature highlights that evaluating the achievement of the video-based training objective requires precisely defining the evaluation methods and tools, including questionnaires, tests, interviews, video analysis, classroom observation, or research protocols [11].

In summary, the analyses of these two studies on educational video-based training indicate that the use of video for training, particularly for teacher training, is an increasingly studied, accessible, and relevant field of work worldwide in recent years. However, both reviews identify surprising gaps and limited results in key aspects: 1) the lack of studies that incorporate video technologies alongside collaborative learning and knowledge building, with a clear research agenda; 2) the lack of scientific evidence of improvements in teachers' professional practice in the classroom and of enhanced direct learning for students as a result of video-based teacher training.

4 Objectives and Methodology

In an effort to test, strengthen, and deepen the line of work already explored, and to fill gaps in the state of the art on this topic, this paper presents a theoretical examination of the articulation of Lesson Study principles and the Course of Action, along with a proposal for greater integration.

5 Principles of Lesson Study and Course of Action

From its beginnings in Japan (during the Meiji era, approximately 1870-1890), Lesson Study was conceived as a collaborative reflection among teachers to monitor a lesson, led by one of the teachers throughout its implementation cycle, to generate knowledge that would allow for the evaluation of the lesson plan, its execution, and its results in terms of student learning.

The dissemination of the Lesson Study strategy in the West (in the USA, approximately 1993-1997) has led to numerous replications and applications. In our case, as indicated, we follow the approach developed by Perez-Gomez & Soto [2]. In this sense, LS is used as a cooperative action research method that seeks to strengthen teacher training and curriculum development by monitoring the cyclical process of an experimental lesson. This process allows for observations, data collection, adjustments, and revisions of the lesson. All of this aims to reconstruct the teacher's practical knowledge, transforming them into a teacher-researcher of their own practice. This fosters the development of competencies focused on how students learn and on how the teacher's existing theories have hindered the changes and adjustments needed to improve their teaching practice [12].

Regarding the theoretical foundation of Neopass@ction [3, 4] the cognitive anthropology advocated by Theureau [13] arises primarily from the field of French-speaking ergonomics. Its objective has been the scientific study of human activity as a dynamic whole, integrating emotion, perception, action, and communication. Its central concept

is that of Course of Action, which refers to all that part of the action or activity that an actor can consciously demonstrate, recount, and comment on to an observer under favorable conditions, without any prior reflection. These comments and descriptions are therefore called by Theureau pre-reflective knowledge [13].

Neopass@ction bases its methodology for analyzing and transforming teaching practice on the Course of Action, its on-site study of classes responds to the premise of studies of pedagogical activity in real, natural classroom situations. Then there is the priority given to the actor, in this case, the teacher, which allows for understanding the meaning of the actor's professional commitment. This explains the importance of asking for feedback on their own teaching practice during the self-confrontation interview to clarify the pre-reflective nature of the actor's activity. In this way, the focus of observation is on the teacher's actual, ecologically situated activity: the real class, not the prescribed lessons. This leads to the identification of typical and critical classroom experiences, thus enabling the modeling of the observed teaching activity. Therefore, Neopass@ction becomes a tool that makes teaching action intelligible and a device that creates spaces for understanding and the potential transformation of teaching practice, both for the teacher recorded in the video and for other colleagues who can learn vicariously from the process of modeling teaching action [3, 4, 12, 14].

5.1 Converging Principles Between the LS and Neopass@ction Approaches

1. Although they stem from different traditions (Japanese Lesson Study and French Néopass@ction), they share the centrality of real-world practice and the use of video as a reflective tool.

2. Both are based on the study of human activity in ecological (real-world) contexts, analyzing what actually happens in the classroom.

3. Both use video as a reflective mirror in the pursuit of moving from pre-reflective thought to practical thinking or informed awareness. They agree that much of teaching operates automatically and requires access to its intelligibility.

4. Both approaches seek to move from proclaimed theories of teaching activity to the actual application of theories in practice.

5. Both agree on the transformative purpose of strategies in the pursuit of teacher professional development and the improvement of the education system.

5.2 Diverging Principles Between Lesson Study and Neopass@ction

1. Regarding the main focus: Lesson Study centers on student learning, while Neopass@ction focuses on teacher action.

2. Regarding the scale of action: Lesson Study works in small groups of no more than six people who design, implement, and review a specific lesson, while Neopass@ction offers a digital video training platform for teachers that provides recorded and annotated professional reference scenarios that can be used on a large scale by other trainers, teachers, supervisors, and educational decision-makers.

3. Regarding the nature of reflection: in Lesson Study, reflective analysis is group-based and dialogical from beginning to end, while in Neopass@ction, the focus is on

self-confrontation, where the teacher discusses and reflects on their own recorded practice with a researcher, which is then reviewed by an expert and discussed in a peer group analysis.

5.3 Complementarities Between the Two

It would be possible to combine both models with the following additions:

1. Enriching the group analysis of Lesson Study with self-confrontation, so the teacher would analyze their class before the group analysis, contributing their experiential analysis to the group discussion.

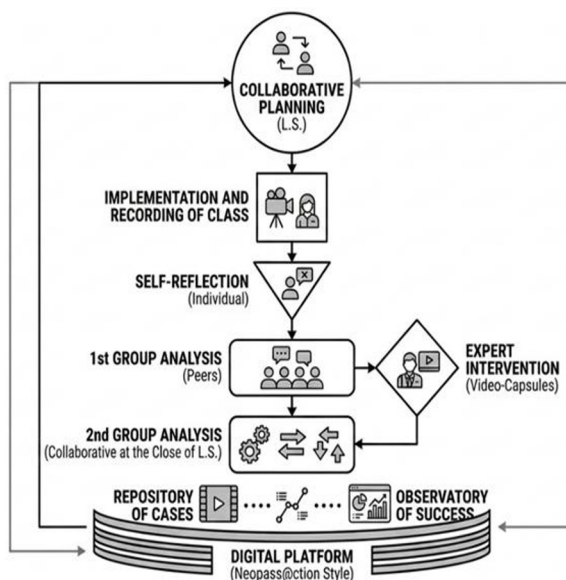
2. Another possibility would be the use of a digital platform like Neopass@ction as a resource to identify typical cases that allow for the analysis of problems addressed in the first phase of Lesson Study.

3. A digital platform like Neopass@ction could also be used as a repository and observatory of the most successful lessons produced through Lesson Study, to capture the valuable results of successful classroom experiences.

4. Finally, the group dynamics of Lesson Study represent emotional and collaborative support, which Neopass@ction identifies but does not develop, which is very important for beginning or trainee teachers, who require a climate of trust and a professional learning community to advance in their training.

In this convergence, the Course of Action studied through a multimedia digital platform, with a corpus of video recordings and a variety of video analyses in the style of Neopass@ction, would provide a panoptic device with a range of resources that would allow for understanding the complexity of the teacher's visible and invisible processes.

Fig. 1. Video model for initial teacher training integrating Lesson Study and Néopass@ction principles in action.



Furthermore, Lesson Study would provide a cooperative, cyclical framework to transform shared teaching experiences into unlikely and sustainable pedagogical practice. This approach (represented in Fig. 1), with its various reflective and proactive implications, aims to enrich the framework for defining and implementing more effective video-based teacher training for UNAE and to transform Ecuadorian teacher education.

Synthesizing fundamental principles from these two perspectives, it is interpreted that, during teaching practicums, each student teacher re/de/constructs and internalizes a semantic matrix of meanings derived from their own teaching practice. This framework contributes to the construction of their professional identity through a series of shared actions: i. Micro-planning a study lesson; ii. Developing and video-recording their study lesson, and iii. Sequential video analysis of the actions of his class, by himself and, subsequently, co-video-analysis with his peers and with experts in teacher training.

The sequential video analysis of situated teaching involves both visible actions of student teachers, recorded on video, and "invisible" actions (emotions, doubts, fears, intuitions, expectations, etc.) that can be expressed retrospectively through self-analysis of the videos. These two categories of actions constitute the "activity" that is the object of this research, based on video recordings of study sessions conducted during the student teachers' practicums.

6 Methodology: Sequential Video Analysis of Situated Teaching Model

The synthesis of the principles of Lesson Study [2, 15] and the Neopass@ction program [4, 14] allowed for the design of a sequential video analysis of situated teaching model, aimed at developing the professional competencies of future Intercultural Bilingual Education (IBE) teachers, according to the following procedure:

1. Collaborative planning and design of a study lesson by each pair or trio of student teachers in the IBE-UNAE program.
2. Implementation of the video-recorded study lesson by the student teacher's partner or the researcher.
3. Self-analysis of the video after the teaching practicum. Each student, accompanied by a researcher, watches the recording of their lesson to identify, analyze, and understand critical situations (subjective experiences, student behavior, use of resources, teaching strategies, etc.). This activity is recorded to extract video clips (3 to 5 minutes) with relevant sequences based on their content. These video clips will be used for an initial peer group analysis. Finally, they will be selected and organized on a digital video training platform according to emerging criteria.
4. Hetero-video analysis conducted by experts in teacher training, offering interpretations and proactive suggestions. This is recorded to extract video clips with relevant sequences based on their level of analysis, thoroughness, proactivity, etc. These clips will be used for a second peer group analysis. Subsequently, they will be selected and organized on the digital video training platform according to emerging criteria.

7 Limitations and practical challenges

1. A major limitation concerns the retention of student teachers within a demanding training dynamic. Researching teaching practices throughout a significant portion of the undergraduate degree program proves unsustainable for some students, whether due to a lack of interest, dropping out of school, or resistance to the process of self-reflection and change.
2. The training process involves technological support in addition to coordination work, which consists of constructing and designing the video platform, identifying and managing video clips for each participant, and facilitating group meetings.
3. Continuous and systematic evaluation of the professional competencies being developed by the participants is also required, which implies the use and application of assessment rubrics to quantify the progress of these training competencies.

8 Conclusion

The study demonstrates how various approaches, decisions, and stages of a public policy for initial teacher training at the National University of Education of Ecuador underpin and precede a proposal for video-based initial teacher education in Intercultural

Bilingual Education. In doing so, it provides a perspective of continuity, deepening, and operationalization of the Educational-Pedagogical Model for one of the institution's degree programs.

In this regard, the Lesson Study approach is complemented in scale, scope, and visibility through the practical organization of self, hetero, and co-video-evaluations of critical and typical moments within the lessons delivered.

The pedagogical action of student teachers becomes the focal point of attention and reflection, to the extent that the video and reflection platform evolves into a Digital Platform. This allows it to serve as both a repository and an observatory for the improvement of professional competencies under development.

The visualization of the process of actions and reflections, intertwined within a single platform, offers opportunities for connectivism applications and the integration of artificial intelligence on a larger scale.

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