i.e.: inquiry in education

Volume 16 | Issue 2 Article 4

2024

Impact of Video Lesson Analysis on Preservice Elementary Teachers' Teaching and Learning

Dr. Eun Kyung Ko
National-Louis University, eun.ko@nl.edu

Impact of Video Lesson Analysis on Preservice Elementary Teachers' Teaching and Learning

Dr. Eun Kyung Ko
National-Louis University

Abstract

This study examines the impact of video-based learning on preservice elementary teachers, focusing on the use of Accomplished Teaching, Learning, and Schools (ATLAS) and Teaching Channel video resources. The research addresses the increasing reliance on video analysis for teacher preparation. Two groups of preservice teachers participated, including those already working in educational settings and career changers new to the field. The study employed a mixed-methods approach, analyzing exit surveys, focus group interviews, and video reflections. Findings reveal that while ATLAS videos provided valuable commentary and classroom observation opportunities, concerns were raised about video quality and realism. Comparisons to Teaching Channel videos highlighted the need for thematic organization and higher production standards. Overall, the videos served as an effective tool for reflection and professional growth, offering insights into effective teaching practices and encouraging self-improvement among preservice teachers.

Keywords: video lesson analysis, teacher education, elementary education

Introduction

The use of lesson videos in teacher education has emerged as a crucial strategy to bridge the gap between theory and practice (Meline et al., 2022; Vrikki et al., 2017). Video analysis allows preservice teachers to observe and reflect on real classroom interactions, which is essential for developing their instructional skills. Research has consistently demonstrated that video-based learning enhances preservice teachers' understanding of pedagogical concepts by providing concrete examples of teaching strategies and classroom management techniques in action (Borko et al., 2008). By watching these interactions, preservice teachers can see how abstract educational theories are applied in practice, making these concepts more tangible and accessible. The integration of expert commentary with video analysis further strengthens this connection, enabling preservice teachers to engage in deeper reflection and critical thinking about instructional decision-making processes (Gaudin & Chaliès, 2015).

Video analysis has become increasingly important in teacher preparation programs, particularly because it allows preservice teachers to observe high-leverage practices that are

aligned with educational theories and research (Johnson & Cotterman, 2015; Santagata & Guarino, 2011). The shift to video analysis became even more pronounced during the COVID-19 pandemic, which disrupted traditional field placements and in-person observations due to school closures and the transition to distance learning. In response to these challenges, resources such as Accomplished Teaching, Learning, and Schools (ATLAS) and the Teaching Channel became indispensable for providing preservice teachers with the necessary observational experiences to develop their teaching practices (Rich & Hannafin, 2009; Zuberbier, 2016). These platforms offer a diverse range of classroom scenarios, allowing preservice teachers to study instructional practices in various contexts and understand the nuances of classroom management and effective teaching.

Despite the clear benefits, the effectiveness of lesson videos also depends on the quality and authenticity of the content. Authentic video content ensures that preservice teachers can relate to the classroom dynamics depicted and imagine themselves applying similar strategies in their own teaching practice. Studies have emphasized that videos perceived as staged or unrealistic may diminish their educational impact (Seidel et al., 2011). Additionally, the organization and accessibility of video resources are crucial for maximizing their utility. Videos that are thematically organized and easy to navigate allow preservice teachers to focus on specific areas of interest or need, enhancing their learning experience (Santagata & Guarino, 2011).

This literature review underscores the growing importance of video analysis in teacher education, especially as a response to the constraints imposed by the COVID-19 pandemic. As teacher preparation programs continue to evolve, the role of video analysis is likely to expand, offering preservice teachers more opportunities to engage with and reflect on effective teaching practices. By leveraging these resources, teacher education programs can provide a richer, more flexible learning experience that equips future educators with the skills and knowledge they need to succeed in diverse classroom environments. Therefore, this study examines the impact of video lessons on preservice elementary teachers' teaching and learning, particularly in the areas of instruction and classroom management, highlighting how these digital resources have become integral to teacher education in the modern context.

Context and Participants

This study involved two groups of preservice teachers enrolled in a Master of Arts in Teaching (MAT) Elementary Practicum I in the fall 2021 (N=46, see Table 1). The first group (Group A, N=25) consisted primarily of individuals who were already working in classrooms and were seeking to obtain their teaching license. These participants were familiar with educational settings and valued the video observations as opportunities to refine their teaching practices, focusing on aspects like lesson planning and classroom management. In contrast, the second group (Group B, N=21) was primarily composed of career changers who were new to the field of education. For them, the video observation opportunities were particularly valuable as they allowed for an in-depth examination of teaching techniques and classroom dynamics. These participants carefully reviewed the selected videos to bridge their experience gap and build confidence in their new career path.

Table 1
Demographics of the Participants

Teaching Experience	Percent	Education	Percent	Ethnicity	Percent	Age	Percent
Yes	45%	Bachelor's degree	48%	Black	13%	20s	31%
No	55%	Some graduate study	37%	Asian	6%	30s	33%
		Master's degree	15%	Hispanic	20%	40s	28%
				White	61%	50s	4%
						60s	4%

Video Library Resources

Accomplished Teaching, Learning, and Schools (ATLAS)

ATLAS is an online resource provided by the National Board for Professional Teaching Standards (NBPTS). This platform offers a comprehensive library of teaching videos featuring NBPTS-certified teachers actively engaged in classroom instruction. Each video, typically around 15 minutes long, showcases the application of effective teaching practices and is accompanied by detailed commentary on the teacher's planning, instruction, and reflection. The videos provide insights into various instructional strategies, classroom management techniques, and student engagement methods, all within the context of real classroom settings. Additionally, ATLAS includes instructional materials and outlines of classroom setups, making it a valuable tool for educators seeking to enhance their teaching practice through the observation of accomplished teachers.

Teaching Channel

Teaching Channel is a dynamic online community designed to support educators in their professional development by providing access to a vast array of teaching techniques and strategies. The platform features videos that have been meticulously reviewed by content experts to ensure they exemplify best teaching practices. These videos, usually 5 to 10 minutes in length, are designed to be highly focused, offering clear guidance on specific instructional techniques and lesson plans. The shorter duration of Teaching Channel videos allows for quick, targeted professional development, enabling teachers to easily incorporate new methods into their classrooms. The platform encourages collaboration and sharing among educators, fostering a community of continuous learning and growth aimed at improving student outcomes.

Research Question

How does the use of the ATLAS video library and Teaching Channel videos in teacher preparation programs influence preservice teachers' understanding of instructional practices and classroom management?

Data Collection and Analysis

Data for this study were collected from a combination of exit surveys, focus group interviews, and video reflections on the ATLAS and Teaching Channel video analysis assignments. This mixed-methods approach allowed for a comprehensive exploration of the participants' experiences, with the triangulation of qualitative and quantitative data enhancing the validity of the findings. The use of both qualitative and quantitative sources enabled me to cross-reference the insights from each data stream, providing a more robust understanding of the impact of video analysis on preservice teachers' learning.

For the qualitative data analysis, I used a thematic coding process. The data from the focus group interviews and video reflections were transcribed and initially subjected to open coding, where preliminary categories were identified based on recurring ideas. During this stage, codes were assigned to segments of text that represented key aspects of the participants' experiences, such as reflections on video quality, commentary, and classroom observation. The open coding process was iterative, with multiple rounds of refinement to ensure the accuracy and clarity of the emerging themes.

Following open coding, axial coding was used to establish relationships between the identified categories, leading to the development of more complex sub-themes. For instance, "value of classroom observation" was connected to participants' discussions on how video analysis influenced their instructional planning. Selective coding was then applied to synthesize the most significant themes, resulting in five core themes that captured the participants' overall experiences: the importance of expert commentary, the value of classroom observation, critiques of video quality and realism, comparisons between ATLAS and Teaching Channel videos, and reflections on teaching practices.

To further validate the findings, triangulation was conducted by comparing the qualitative themes with quantitative data from the exit surveys. This approach provided a richer interpretation of the data, as the qualitative insights from interviews and reflections added context to the numerical trends in the survey responses. For example, participants' positive ratings of both video platforms were supported by detailed qualitative feedback highlighting their appreciation for specific features of each resource.

Inter-coder reliability checks were conducted to ensure consistency in the thematic coding process. Two researchers independently coded the data, and discrepancies were resolved through discussion, which enhanced the robustness of the coding and ensured that the themes accurately reflected the participants' views.

Findings

Both groups provided positive feedback, as evidenced in Table 2, which presents the survey results on the effectiveness of observing teaching practices through two different video resources. The average scores for both resources were quite high, indicating that respondents from both groups found value in observing teaching through these platforms. The overall preference for the Teaching Channel, with a total score of 4.25 compared to 4.13 for ATLAS, reinforces the idea that it may have broader appeal or more diverse content that resonates with both groups.

Table 2
Survey Results

How effective was observing…?	ATLAS	Teaching Channel
A (N=25)	3.83	4.08
B (N=21)	4.43	4.42
Total*	4.13	4.25

*Five-point Likert scale

Group A rated the Teaching Channel higher than ATLAS, indicating a preference for the resources available in the Teaching Channel. The scores suggest that while both platforms are beneficial, the Teaching Channel may have features or content that are more appealing or useful for this group. Interestingly, Group B, primarily composed of career changers, rated ATLAS slightly higher than the Teaching Channel. This indicates a strong appreciation for the specific features or teaching episodes offered by ATLAS. The close scores (4.43 vs. 4.42) show that both resources were well-regarded, but the slight edge for ATLAS might suggest that these career changers found the content particularly relevant or applicable to their needs as they transition into teaching. The career changers' greater appreciation for video resources, particularly for ATLAS, suggests that they value practical examples of teaching practices. This could imply that the videos available through ATLAS offer more relevant scenarios that align with their experiences or aspirations as new educators. Overall, the positive feedback from both groups indicates that video observation resources like ATLAS and the Teaching Channel are valuable tools for supporting future educators. The nuanced preferences between groups provide insight into how these resources can be tailored to better serve the diverse backgrounds and needs of teacher candidates.

The assignments and reflective discussion data revealed varied perspectives on the effectiveness of ATLAS and Teaching Channel videos as tools for teacher education. Participants highlighted several strengths and weaknesses of the videos, often focusing on specific aspects that contributed to or detracted from their learning experience. These insights can be categorized into five key areas: the importance of commentary, the value of classroom observation, critique of video quality and realism, comparison to Teaching Channel videos, and reflection on teaching practices (see Table 3).

Table 3
Key Themes Distribution

Key Themes	Descriptions	Percent
The Importance of Commentary	Participants emphasized the role of expert commentary in helping them understand the nuances of classroom interactions and teaching strategies. The commentary was seen as crucial for bridging the gap between theory and practice.	31%
The Value of Classroom Observation	Participants valued the opportunity to observe classroom practices, noting that it allowed them to see teaching techniques in action and reflect on how these could be applied in their own practice.	24%
Critiques of Video Quality and Realism	Some participants critiqued the quality of the videos, particularly in terms of how realistic and representative they were of actual classroom environments. This critique often centered on the perceived staged nature of some videos and the lack of diverse classroom settings.	18%
Comparisons Between ATLAS and Teaching Channel Videos	Participants compared the two video platforms, discussing the strengths and weaknesses of each. ATLAS was often praised for its in-depth analysis and structured approach, while the Teaching Channel was appreciated for its broader range of examples.	17%
Reflections on Teaching Practices	The video analysis assignments prompted participants to reflect on their teaching practices, with many expressing how the observations led them to rethink certain aspects of their instructional approach.	10%

The most prominent theme, "The Importance of Commentary," accounted for 31% of the total coded instances, underscoring how participants valued expert commentary for its role in bridging theory and practice. The second theme, "The Value of Classroom Observation," constituted 24% of the coded instances, highlighting the appreciation participants had for observing real-world teaching practices through video. Meanwhile, 18% of the coded instances were related to "Critiques of Video Quality and Realism," where participants expressed concerns about the authenticity and quality of the video content, particularly its representation of actual classroom environments. "Comparisons Between ATLAS and Teaching Channel Videos" emerged as another significant theme, making up 17% of the coded instances, reflecting discussions on the strengths and weaknesses of each video platform. Lastly, "Reflections on Teaching Practices" comprised 10% of the coded instances, capturing participants' reflections on how the video observations influenced their teaching practices and instructional approaches. These percentages provide a quantitative insight into the relative importance of each theme within the overall analysis.

Importance of Commentary

The detailed commentary accompanying the ATLAS videos was highly praised by participants for its role in enhancing their understanding of instructional decisions. One participant noted, "The ATLAS commentary tab was super helpful in understanding the planning that went into each lesson" (P3, focus group interview), underscoring the value of contextual information in deepening the learning experience (Johnson & Cotterman, 2015). Such insights allowed preservice teachers to gain a better grasp of the complexities involved in lesson planning and execution. Previous studies have emphasized that commentary in video analysis can support reflective practice and help preservice teachers make connections between theory and practice (Borko et al., 2008).

Value of Classroom Observation

Participants widely recognized the importance of observing real classroom settings, even if only through videos. One respondent shared, "I find watching other people teach extremely helpful and probably the best way to learn how to do any component of teaching" (P1, focus group interview). The ability to observe different teaching styles and classroom dynamics was seen as particularly beneficial, especially in contexts where in-person classroom access was limited due to the pandemic. Research has shown that video observation allows preservice teachers to view classroom interactions from multiple perspectives, enhancing their ability to analyze teaching practices (Sherin & van Es, 2009).

Critique of Video Quality and Realism

Despite the benefits, several respondents expressed concerns about the quality and realism of the ATLAS videos. Some felt that the videos lacked authenticity, with one participant commenting, "The videos seemed staged like the kids knew they were being filmed" (P33, focus group interview). These critiques highlight the importance of providing high-quality, engaging, and realistic video content in teacher education. As noted by Seidel et al. (2011), the perceived authenticity of video content is crucial for its effectiveness in teacher education.

Comparison to Teaching Channel Videos

When comparing ATLAS videos to those from the Teaching Channel, some participants expressed a preference for the latter due to its thematic organization and higher production quality. One respondent mentioned, "I liked the Teaching Channel videos more than the ATLAS videos because the Teaching Channel videos are sorted by specific themes" (P24, course assignment). This preference suggests that while ATLAS videos offer valuable insights, improvements in accessibility and navigation could enhance their effectiveness. Previous studies have highlighted the importance of clear organization and user-friendly interfaces in maximizing the impact of video resources in education (Rich & Hannafin, 2009).

However, when they focused on questioning, the participants praised the ATLAS videos for their effective questioning strategies, where the teacher asked guiding questions throughout the lesson, helping students connect prior knowledge with new information and engage in critical thinking. Conversely, the Teaching Channel videos were noted for asking questions that were more simplistic and focused on assessing prior knowledge without deeply engaging students in the activity.

> In the ATLAS video, the teacher was helping to guide student understanding through an examination of their own personal experiences and incorporating that with knowledge they've gained through this and prior lessons. I found that this was an effective approach because it helped to connect a student's prior knowledge to the new information and the activity being presented in the lesson. (P19, course assignment)

Reflection on Teaching Practices

The videos also served as a tool for self-reflection, with many participants identifying areas for personal growth in their teaching practices. One respondent shared, "Watching the videos taught me patience and asking questions instead of saying 'you're wrong'" (P15, focus group interview). This reflection process encouraged future educators to critically assess and refine their teaching strategies, further contributing to their professional development (Johnson & Cotterman, 2015). The role of video-based reflection in promoting self-assessment and professional growth is well-documented in the literature (Gaudin & Chaliès, 2015).

Discussion

The findings of this study emphasize the significant role that video analysis plays in preservice teacher education, particularly in enhancing the understanding of teaching practices and classroom management. The integration of ATLAS and Teaching Channel videos provided preservice teachers with a valuable opportunity to observe real-world teaching scenarios, reflect on their practices, and engage with expert commentary, which helped bridge the gap between theoretical knowledge and practical application.

One of the key insights from the study is the distinct preferences observed between the two participant groups: experienced teachers (Group A) and career changers (Group B). Group A, already familiar with classroom dynamics, rated the Teaching Channel videos higher, likely due to the platform's thematic organization and higher production quality. These preservice teachers seemed to benefit more from focused content that allowed them to refine specific aspects of their practice. In contrast, Group B, composed primarily of career changers, showed a slight preference for ATLAS videos. This may be attributed to ATLAS's in-depth commentary, which offered these participants essential insights into instructional decision-making—critical for bridging their lack of classroom experience. This finding aligns with prior research indicating that career changers in teacher preparation programs often require more foundational, hands-on observation experiences to build confidence and competence in their new profession (Osmanoglu, 2016).

The critique of video quality and realism emerged as another important theme, with participants expressing concerns about the perceived staged nature of some videos, particularly from the ATLAS platform. These critiques highlight the need for educational video resources to accurately depict authentic classroom environments. As noted in previous research (Seidel et al., 2011), the effectiveness of video analysis in teacher education is significantly enhanced when videos are perceived as realistic and representative of actual teaching contexts. To address this issue, teacher education programs should consider curating or producing videos that feature unscripted, candid classroom interactions to provide a more authentic learning experience for preservice teachers.

Another noteworthy finding is the importance of expert commentary in supporting preservice teachers' reflection on instructional strategies. Many participants in this study highlighted how the detailed commentary in ATLAS videos helped them better understand the reasoning behind teachers' instructional decisions. This aligns with the work of Borko et al. (2008), who found

that commentary accompanying video analysis enhances teachers' ability to connect theory with practice and fosters deeper reflection. Moving forward, teacher education programs should continue to integrate videos with expert commentary, as it encourages preservice teachers to critically evaluate their instructional choices and consider alternative strategies for classroom management and student engagement.

The findings also revealed the impact of video analysis on participants' self-reflection and professional growth. Many preservice teachers reported that watching the videos led them to rethink their instructional approaches, particularly in terms of questioning techniques and classroom interactions. The reflection process encouraged by these videos mirrors findings from Gaudin and Chaliès (2015), who emphasized that video-based reflection fosters self-assessment and encourages continuous improvement in teaching practices.

While both ATLAS and Teaching Channel videos were well-regarded, the nuanced preferences between the two groups suggest that video resources in teacher education should be tailored to meet the specific needs of diverse learners. For more experienced teachers, shorter, thematic videos that focus on refining existing skills may be more effective, whereas career changers may benefit from more comprehensive videos that offer deeper analysis and insights into instructional practices. These differentiated resources can better support preservice teachers at varying stages of their professional development.

Finally, this study also points to a critical need for diversity in video content. The lack of representation of diverse teachers and classroom settings in the ATLAS and Teaching Channel videos presents a limitation, as it hinders preservice teachers' preparation for culturally responsive teaching. To address this gap, future video resources should aim to showcase a wider range of cultural contexts and teaching practices that reflect the realities of multicultural classrooms. By doing so, teacher education programs can better equip preservice teachers to navigate diverse teaching environments and foster inclusive learning experiences for all students.

In conclusion, this study reinforces the value of video analysis in preservice teacher education, highlighting the importance of expert commentary, realistic video content, and differentiated resources. To maximize the effectiveness of video-based learning, teacher education programs should continue to refine the quality and diversity of their video libraries, ensuring that all preservice teachers, regardless of their background or experience, can benefit from these valuable observational tools.

Implications

The findings from this study suggest several important implications for teacher education programs, particularly regarding the integration of video analysis into the curriculum. First, programs should consider tailoring video resources to meet the specific needs of different groups of preservice teachers. For example, more experienced individuals, such as those in Group A, may benefit from videos that explore complex instructional strategies and classroom management techniques, while career changers, like those in Group B, might require videos that provide foundational insights into classroom dynamics and basic teaching strategies.

Additionally, the feedback on video quality and realism indicates a need for higher production standards in educational videos. To address this, programs should invest in creating or curating videos that depict authentic classroom environments and avoid the perception of staging. This could involve using candid, unscripted classroom interactions that capture the complexities and challenges of real teaching scenarios. Furthermore, incorporating reflective practice is essential for teacher development. The use of video analysis should be accompanied by structured reflection activities that guide preservice teachers in critically analyzing their own teaching and identifying areas for growth. Facilitators should encourage participants to connect their observations with their personal experiences and theoretical knowledge. Finally, the preference for Teaching Channel videos due to their thematic organization highlights the importance of making video resources easily accessible and well-organized. Teacher education programs should consider providing a user-friendly platform where preservice teachers can easily navigate videos based on specific themes, topics, or teaching strategies.

Conclusion

The integration of video analysis into teacher education has proven to be an effective strategy for developing preservice teachers' skills and knowledge, particularly in contexts where traditional classroom observations are not feasible (Johnson & Cotterman, 2015; Meline et al., 2022; Santagata & Guarino, 2011). However, this study underscores the critical need to address gaps in the diversity of video resources currently available. The collection of videos, such as those provided by ATLAS, predominantly features white teachers and less diverse student populations. This lack of representation poses a significant challenge in preparing future educators to effectively teach in multicultural and diverse classroom settings.

To truly equip preservice teachers with the skills necessary for culturally responsive teaching, it is imperative that video resources reflect the realities of diverse classrooms (Gay, 2018; Osmanoglu, 2016). This includes showcasing teaching episodes that involve a range of cultural backgrounds, languages, and instructional strategies that address the unique needs of all students (Ladson-Billings, 1995). By incorporating more diverse classroom settings and teaching episodes, teacher education programs can better prepare future educators to navigate and succeed in the increasingly multicultural and dynamic environments they will likely encounter in their careers (Cochran-Smith et al., 2016). This shift is not just about improving the quality of teacher training; it is about ensuring equity and excellence in education for all students, regardless of their background.

References

Borko, H., Jacobs, J., Eiteljorg, E., & Pittman, M. E. (2008). Video as a tool for fostering productive discussions in mathematics professional development. *Teaching and Teacher Education*, *24*(2), 417–436. https://doi.org/10.1016/j.tate.2006.11.012

Cochran-Smith, M., Villegas, A. M., Abrams, L., Chavez-Moreno, L., Mills, T., & Stern, R. (2016). Research on teacher preparation: Charting the landscape of a sprawling field. *Studying teacher education*, *11*(3), 245–274. 10.3102/978-0-935302-48-6_7

Gaudin, C., & Chaliès, S. (2015). Video viewing in teacher education and professional development: A literature review. *Educational Research Review*, *16*, 41–67. https://doi.org/10.1016/j.edurev.2015.06.001

Gay, G. (2018). *Culturally responsive teaching: Theory, research, and practice* (3rd ed.). Teachers College Press.

Johnson, H. J., & Cotterman, M. E. (2015). Developing preservice teachers' knowledge of science teaching through video clubs. *Journal of Science Teacher Education*, *26*(4), 393–417. http://www.jstor.org/stable/43670642

Ladson-Billings, G. (1995). Toward a theory of culturally relevant pedagogy. *American Educational Research Journal*, *32*(3), 465–491. https://doi.org/10.3102/00028312032003465

Meline, M., Harn, B., Jamgochian, E., Stickland-Cohen, M., Linan-Thompson, S., & Lucero, A. (2022). Examining the use of video analysis on teacher instruction and teacher outcomes. *The Journal of Special Education*, *57*, 83–93. https://doi.org/10.1177/00224669221133773

Osmanoglu, A. (2016). Prospective teachers' teaching experience: teacher learning through the use of video. *Educational Research*, *58*, 39–55. https://doi.org/10.1080/00131881.2015.1117321

Rich, P. J., & Hannafin, M. J. (2009). Video annotation tools: Technologies to scaffold, structure, and transform teacher reflection. *Journal of Teacher Education*, *60*(1), 52–67. https://doi.org/10.1177/0022487108328486

Santagata, R., & Guarino, J. (2011). Using video to teach future teachers to learn from teaching. *The International Journal of Mathematics Education*, *43*(1), 133–145. doi:10.1007/s11858-010-0292-3

Seidel, T., Stürmer, K., Blomberg, G., Kobarg, M., & Schwindt, K. (2011). Teacher learning from analysis of videotaped classroom situations: Does it make a difference whether teachers observe their own teaching or that of others? *Teaching and Teacher Education*, *27*(2), 259–267. https://doi.org/10.1016/j.tate.2010.08.009

Sherin, M. G., & van Es, E. A. (2009). Effects of video club participation on teachers' professional vision. *Journal of Teacher Education*, *60*(1), 20–37. doi:10.1177/0022487108328155

Vrikki, M., Warwick, P., Vermunt, J., Mercer, N., & Halem, N. (2017). Teacher learning in the context of lesson study: A video-based analysis of teacher discussions. *Teaching and Teacher Education*, *61*, 211–224. https://doi.org/10.1016/j.tate.2016.10.014

Zuberbier, D. (2016). Accomplished Teaching, Learning and Schools (ATLAS). Annual reviews. *The Charleston Advisor*, *17*(3). doi:10.5260/chara.17.3.5