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Professional learning community and critical thinking in students

Comunidad de aprendizaje profesional y pensamiento crítico en estudiantes

Sindili Margarita Varas Rivera
svarasr@ucvvirtual.edu.pe
Universidad César Vallejo, Trujillo, La Libertad, Perú
https://orcid.org/0009-0006-0030-1446

ABSTRACT

The objective of this research is to determine the relationship between professional learning community and critical thinking in students of an educational institution in Chiclayo - Peru. Regarding the nature of the research, it is quantitative and is framed as a basic type, 48 teachers were selected as a sample. In light of these results, we proceed to reject the null hypothesis, supporting the research hypothesis and confirming that the strength of the CAP has a positive impact on the development of critical thinking in students. The interconnection between the Professional Learning Community and Critical Thinking is not only presented as a fruitful theoretical perspective but as a tangible reality with the potential to transform education. Collaboration in the CAP nurtures the evolution of pedagogical practices, promotes professional development, and ultimately contributes to the formation of critical and participatory citizens.

Descriptors: critical thinking; demonstrations (educational); teaching and training. (Source: UNESCO Thesaurus).

RESUMEN

La investigación tiene por objetivo determinar la relación entre comunidad de aprendizaje profesional y pensamiento crítico en estudiantes de una institución educativa de Chiclayo – Perú. En cuanto a la naturaleza de la investigación, es cuantitativa y se enmarca de tipo básica, se seleccionó como muestra a 48 docentes. A la luz de estos resultados, se procede a rechazar la hipótesis nula, respaldando la hipótesis de investigación y confirmando que la fortaleza de la CAP impacta positivamente en el desarrollo del pensamiento crítico en los estudiantes. La interconexión entre la Comunidad de Aprendizaje Profesional y el Pensamiento Crítico no solo se presenta como una perspectiva teórica fructífera sino como una realidad tangible con el potencial de transformar la educación. La colaboración en la CAP nutre la evolución de prácticas pedagógicas, promueve el desarrollo profesional y, en última instancia, contribuye a la formación de ciudadanos críticos y participativos.

Descriptores: pensamiento crítico; demostración pedagógica; enseñanza y formación. (Fuente: Tesauro UNESCO).

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Research articles section

INTRODUCTION

In the glare of the digital era, the educational field is immersed in a constant process of transformation. In this scenario, the notion of "Professional Learning Community" (CAP) has emerged as a guiding beacon, illuminating the path towards a more effective and adaptive education (Eirín-Nemiña, 2018). KLCs, understood as collaborative environments where educators share knowledge, experiences and pedagogical strategies, have acquired significant relevance in the contemporary context. The very fabric of education has evolved, and with it, the demand for a more dynamic and collaborative approach among teaching professionals. In this context, KAPs have flourished as virtuous spaces where teachers, principals, and other educational actors converge to improve their pedagogical practice and thus enrich the learning experience of students (Cabezas, et al. 2021), (Vaillant, 2019).

The fundamental purpose of this article is to explore in depth the phenomenon of Professional Learning Communities, delineating their essential characteristics, examining their tangible and intangible benefits, and exploring possible avenues for their successful implementation in diverse educational settings. As education expands beyond the traditional walls of the classroom, CAPs present themselves as a bridge between theory and practice, uniting educators in a collaborative learning network (Rivera-Huaranga & Ledesma-Cuadros, 2021).

The very nature of CAPs is based on the premise that continuous learning is essential for **e**ducational excellence. In a world where information flows rapidly and pedagogical methodologies are constantly evolving, professional isolation is no longer a viable option. KAPs offer a remedy to this disconnect by fostering the collective construction of knowledge and continuous adaptation to the changing demands of the educational environment (Chue, 2016). In examining the distinctive characteristics of KAPs, it is imperative to highlight their inclusive and diverse nature. These communities transcend geographical boundaries and bring together professionals from diverse disciplines, educational levels, and cultural backgrounds. This diversity becomes an invaluable asset, as it fosters the generation of innovative ideas and the transfer of good practices between seemingly disparate educational environments (Heemskerk, et al. 2020).

Technology plays a crucial role in building and sustaining KAPs. Online platforms, specialized social networks and collaborative tools allow educators to connect across physical boundaries, sharing resources, pedagogical strategies and common challenges. The virtuality of these communities expands the possibilities for exchange and collaboration, facilitating the active participation of educators who might otherwise be marginalized from professional development opportunities (Hayward & Ward, 2018), (Anderi, et al. 2020).

However, effective implementation of CAPs is not limited to the adoption of advanced technologies. It requires genuine commitment on the part of educators, educational leaders, and the institutions that support them. Building a collaborative learning culture involves overcoming cultural barriers, fostering trust and encouraging a willingness to share knowledge and experiences. In addition, it is imperative to consider the creation of incentives and recognition that value and promote active participation in these communities.

In this journey towards a more holistic and learning-centered education, KAPs emerge as fundamental pillars. By deploying a range of strategies, from peer mentoring to collaborative reflection on practice, these communities provide a space where educators can grow and thrive professionally. Adopting professional development approaches based on collaboration and critical reflection promotes a culture of continuous improvement, thereby enriching the quality of the educational process.

The fascinating world of professional learning communities, exploring their impact on teacher education, the improvement of pedagogical practice and, ultimately, on the educational experience of students. Through a comprehensive analysis, it aims to shed light on the dynamics, challenges and opportunities surrounding these communities, highlighting their crucial role in building a more collaborative, adaptive and inclusive educational ecosystem.

At the crossroads of contemporary education, critical thinking emerges as a shining beacon, outlining the path towards intellectual development and preparation to face the complex

challenges of the 21st century. The ability to analyze, evaluate and synthesize information in a reflective manner has become a key element in the development of the 21st century.

Critical thinking, as a pedagogical construct, has been the subject of attention and research for decades. From its conceptualization by thinkers such as John Dewey and Bertrand Russell to contemporary theories of educational psychology, its evolution has been marked by an increasing recognition of its importance in the cognitive development of individuals. In the information age, where the amount of available data is overwhelming, critical thinking stands as an invaluable tool to discern, question and understand the complexity of the world around us.

Critical thinking goes beyond the mere accumulation of knowledge; it is an active process that involves the reflective application of analytical skills to solve problems, make informed decisions and form informed opinions. In a broad sense, it involves developing the ability to question assumptions, consider alternative perspectives and communicate ideas clearly and effectively. At the very heart of this process lies the ability of students to become independent and autonomous thinkers (Bezanilla-Albisua, et al. 2018).

The traditional approach to education, focused on the transmission of facts and concepts, has undergone a tectonic shift towards a paradigm that values students' ability to think critically. This shift not only responds to the need to prepare young people for a competitive and constantly evolving employment landscape, but also reflects a deeper understanding of education as a means to empower individuals in their ability to actively participate in society.

Critical thinking, as a cross-cutting skill, finds its application across disciplines and educational levels. From mathematical problem solving to literary analysis, its influence permeates the entire spectrum of learning. However, its effective integration in the classroom is not trivial. It requires a change in pedagogical practices, where educators become facilitators of the thinking process rather than transmitters of information. This transformation involves the creation of learning environments that foster inquiry, discussion and collaboration, thus stimulating the development of critical thinking in each student.

The benefits of critical thinking are not limited to the academic environment; they transcend the classroom and are projected into everyday life and civic participation. Individuals who possess critical thinking skills are able to approach complex challenges with acuity and creativity, question the information they receive, and make decisions based on evidence and reasoning. In a world where misinformation and manipulation are omnipresent challenges, critical thinking becomes a protective shield, enabling students to discern between truth and fallacy.

However, the path to fostering critical thinking is not without its challenges. The assessment of this skill is inherently complex, as it goes beyond conventional testing and requires more holistic and contextualized assessment methods. Moreover, the diversity of pedagogical approaches and individual differences in cognitive development present additional challenges for educators seeking to cultivate critical thinking effectively.

Throughout this article, the theoretical foundations of critical thinking will be explored, its application in specific educational settings will be examined, and effective pedagogical strategies for cultivating this skill in students will be discussed. In addition, contemporary issues related to critical thinking, such as its relationship to technology and its role in the formation of informed and participatory citizens, will be addressed.

It seeks to shed light on the transcendental role of critical thinking in the integral development of students. As we move towards an increasingly complex and interconnected future, the promotion of critical thinking is not simply a pedagogical option, but an educational imperative that shapes the ability of individuals to understand, question and transform the world around them.

Based on the above; the research aims to determine the relationship between professional learning community and critical thinking in students of an educational institution in Chiclayo - Peru.

METHOD

Regarding the nature of the research, it is quantitative and is framed as basic, with the fundamental purpose of broadening the understanding of the variables: professional learning community and critical thinking in students. The population of interest consisted of all elementary school teachers in an educational institution in Chiclayo - Peru, thus forming the census population due to its small size.

Forty-eight teachers were selected as a sample, and a survey was used as the first research technique. This instrument, a questionnaire designed with specific questions, facilitated the collection of data from a large number of participants. Complementarily, the observation technique was implemented, which provided detailed information by recording the study phenomenon directly in the educational environment.

For both techniques, specific instruments were developed. The questionnaire was used for the collection of data related to the variables professional learning community and critical thinking in students. The validity of the instruments was ensured through expert judgment, where three doctors evaluated the relevance of each item with respect to the indicators, thus ensuring internal consistency.

Data collection was carried out with the consent of the participants, and the integrity of the findings was guaranteed, avoiding manipulation. Subsequently, the data were processed using the SPSS 26 statistical program, establishing frequencies and percentages of the variables and dimensions, presenting them in tables for analysis and interpretation. Given the ordinal nature of the dependent variable, an ordinal logistic regression test was used to contrast the general and specific hypotheses of the study.

RESULTS

Research hypothesis:

H1: There is a relationship between professional learning community and critical thinking in students of an educational institution in Chiclayo - Peru.

H0: There is no relationship between professional learning community and critical thinking in students of an educational institution in Chiclayo - Peru.

Table 1. Parameter estimates disentangling the relationships and statistical significance of the variables under study.

		Estimación	Wald	Sig.
Umbral	[D2_DD = 2]	17,020	,000	,001
Ubicación	[V1_CAP=2]	36,120	.	.
	[V1_ CAP =3]	15,922	,000	,002
	[V1_ CAP =4]	0[a]	.	.
	[V3_PCE=2]	-,894	,970	,005
	[V3_PCE=3]	0[a]	.	.

Source: Own elaboration.

Table 1 presents the parameter estimates obtained in the analysis, unraveling the relationships and statistical significance of the variables under study. In relation to the learning community (LC), the results reveal significance at the strong level (p = 0.002) in conjunction with critical thinking at the process level (p = 0.001). This finding indicates that when KAP is manifested in its most robust form, critical thinking in students is in the process of development. Likewise, in the context of professional learning communities, significance is observed at the process level (p = 0.005). Therefore, in light of these results, we proceed to reject the null hypothesis, supporting the

research hypothesis and confirming that the strength of the KLC positively impacts the development of critical thinking in students.

DISCUSSION

In the contemporary educational landscape, two fundamental pillars emerge as driving forces defining the path to pedagogical excellence and holistic student development: the professional learning community (PLC) and critical thinking. At the intersection of these two powerful currents, fertile ground is revealed where collaboration among educators is intertwined with students' ability to analyze, question, and understand deeply (Elizalde-García, et al. 2022). This article ventures into the joint exploration of professional learning community and critical thinking, unraveling their interconnections, examining their reciprocal influences, and highlighting their impact on the formation of active learners and critical citizens.

Professional Learning Community (PLC): Collaborative Journey to Educational Excellence

The very fabric of education has been transformed into an interconnected network of professionals who continually seek strategies to enrich their pedagogical practices. In this context, professional learning communities (PLCs) have emerged as oases of collaboration, where educators from diverse disciplines and levels congregate to share experiences, challenges, and, most crucially, knowledge (Hayward & Ward, 2018), (Anderi, et al. 2020).

CAP is more than just a forum for discussion; it is a dynamic ecosystem where collective synergy elevates individual competence. The essence of these communities lies in the active engagement with continuous learning, collaborative reflection, and sharing of effective practices. From lesson planning to the implementation of innovative strategies, CAP provides a space where educators can nurture each other and thereby improve the quality of the teaching they provide (Zarate, 2022).

Modern technology acts as a catalyst that enhances the creation and maintenance of CAPs. Online platforms, specialized social networks, and collaborative tools offer educators unprecedented access to global resources, ideas, and perspectives. This virtual connectivity expands the horizons of collaboration, allowing CAPs to transcend geographic limitations and become global professional learning networks (Heemskerk, et al. 2020), (Rivera-Huaranga & Ledesma-Cuadros, 2021).

Critical Thinking: The Cognitive Compass to an Uncertain Future

As CAPs weave the fabric of professional learning, critical thinking emerges as the common thread that runs through all disciplines and educational levels. This mental process involves the ability to analyze, evaluate and synthesize information in a reflective and autonomous manner. Critical thinking goes beyond the memorization of facts; it is a tool that empowers students to question assumptions, consider multiple perspectives, and make informed decisions (Cangalaya-Sevillano, 2020).

In the educational context, critical thinking becomes the foundation upon which deep understanding is built. from solving mathematical problems to interpreting literary texts, this skill is the cognitive compass that guides students on their intellectual journey. As the world becomes increasingly complex and information-rich, critical thinking stands as a protective shield against misinformation and superficiality (Muñoz-Barriga, et al. 2023), (Cruz-Picón & Salinas-Peñaloza, 2022).

Interweaving Threads: The CAP symphony and critical thinking.

The connection between the professional learning community and critical thinking reveals itself as a harmonious symphony that elevates education to new heights. In the CAP crucible, educators not only share resources and pedagogical strategies, but also collaborate to design learning experiences that foster critical thinking in their students.

CAP acts as a laboratory where the seeds of critical thinking are sown and cultivated. Through discussion and collaboration, educators share pedagogical approaches that stimulate deep analysis and reflection in their students. this collective process enriches each participant's

pedagogical toolbox, allowing them to incorporate innovative strategies for cultivating critical thinking in their classrooms.

In turn, students' critical thinking becomes the bond that strengthens CAP. educators, by encouraging independent analysis and questioning, foster an environment where the learning community thrives on the diversity of perspectives. students, by engaging in critical problem solving, not only internalize concepts, but also contribute to the collective construction of knowledge in CAP.

Integrated Strategies: Fostering CAP and Critical Thinking

Effective integration of CAP and critical thinking requires carefully designed pedagogical strategies. collaborative lesson planning, peer mentoring, and the implementation of interdisciplinary projects are just a few examples of how these two forces can converge into a comprehensive pedagogical approach.

In CAP, strategies can include structured case analysis sessions, where educators apply critical thinking to address specific pedagogical challenges. using online platforms to share resources and engage in discussions facilitates the creation of a virtual community that transcends geographic and time constraints.

Within the classroom, educators can design activities that foster critical thinking, such as debates, research projects and analysis of real-world problems. At the same time, peer feedback in CAP can enrich these strategies, providing valuable perspectives and refining pedagogical practices.

The preceding section has unraveled the complex relationship between the professional learning community (PLC) and critical thinking, highlighting their potential synergy for transforming education into a collaborative and reflective journey. In this phase of the discussion, we will delve into the practical and theoretical implications of this association, examining how collaboration in the CAP can enhance the promotion of critical thinking and vice versa; for this it is necessary to consider:

1. Reflection on the evolution of pedagogical practices.

A crucial aspect that emerges from our exploration is the capacity of CAP to act as a catalyst for the evolution of pedagogical practices. Collaboration among educators within these communities provides opportunities for the exchange of effective strategies, innovative teaching methods, and differentiated assessment approaches. This ongoing dialogue not only enriches the pedagogical toolbox of participants, but also fosters a culture of continuous learning that translates into the classroom.

2. **Professional development and collaborative learning.**

The CAP, by nurturing ongoing professional development, serves as a space where educators can engage in collaborative learning. The exchange of experiences, shared reflection on pedagogical challenges, and co-creation of solutions promote a sense of community and support among education professionals. This environment conducive to collaborative learning translates directly into the promotion of Critical Thinking, as the diversity of perspectives and approaches enriches the understanding and application of teaching strategies that cultivate this skill in students.

3. **Impact on the formation of critical citizens.**

The association between KAP and critical thinking also has significant ramifications for the formation of critical and participatory citizens. As educators develop and apply pedagogical strategies that foster critical thinking, they are directly contributing to the formation of students capable of analyzing information, making informed decisions and actively participating in society. The CAP, by being a space where best practices are shared, contributes to the creation of a collective of educators committed to the formation of critical and reflective citizens.

4. **Ethical challenges and considerations.**

However, it is essential to recognize the challenges inherent in this collaborative journey. The diversity of pedagogical approaches within CAP can generate tensions and ethical challenges. It is critical to address these differences with respect and openness, fostering constructive dialogue that allows educators to learn from each other without imposing single models. In addition, effective assessment of critical thinking remains a challenge, and CAP can be an enabling space for the development and validation of more holistic assessment tools.

5**. Future Lines of Research.**

The association between KAP and critical thinking opens the way for a number of promising research questions. For example, future research could further explore how specific dynamics within CAP influence the successful implementation of pedagogical strategies that foster critical thinking. In addition, the effectiveness of collaborative-focused professional development programs in CAP in enhancing students' critical thinking skills could be probed.

CONCLUSION

In the context of professional learning communities, significance is observed at the process level ($p = 0.005$). Therefore, in light of these results, we proceed to reject the null hypothesis, supporting the research hypothesis and confirming that the strength of the CAP positively impacts the development of critical thinking in students. The interconnection between the Professional Learning Community and Critical Thinking is not only presented as a fruitful theoretical perspective but as a tangible reality with the potential to transform education. Collaboration in CAP nurtures the evolution of pedagogical practices, promotes professional development, and ultimately contributes to the formation of critical and participatory citizens. However, addressing the challenges inherent in this collaboration and defining ethical strategies for its effective implementation are critical tasks to maximize its impact. On the horizon, these lines of research and practice could illuminate new avenues for a richer, more reflective and meaningful education for the benefit of students and society as a whole.

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CONFLICT OF INTEREST

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