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ORIGINAL ARTICLE

Summarize, Narrow down, Analyze, Probe, Plan, and Select: a strategy for initial training in Ophthalmology

Summarize, Narrow down, Analyze, Probe, Plan y Select: estrategia para la formación inicial en Oftalmología

Niurka Pérez Vázquez[1*] https://orcid.org/0000-0001-8570-6878
Lillian Gloria León Veitía[1] https://orcid.org/0000-0001-6959-954X
Keilym Artiles Martínez[2] https://orcid.org/0000-0002-5320-4264
Juana Nancy Luís Fernández[2] https://orcid.org/0000-0001-5678-5538
Neyda Alina González Pérez[1] https://orcid.org/0000-0003-1942-3671
Elaine Teresa Gutiérrez Pérez[1] https://orcid.org/0000-0002-7783-2249

[1] University of Medical Sciences of Villa Clara. Arnaldo Milán Castro University Clinical Surgical Hospital. Villa Clara. Cuba.
[2] University of Medical Sciences of Villa Clara. Villa Clara. Cuba.

[*] Corresponding author. Email: niurkapv1981@gmail.com

ABSTRACT

Background: the Ophthalmology outpatient clinic constitutes the main scenario for work-based education during the initial training of physicians in Cuba; however, limitations persist related to theory–practice integration, teaching feedback, resource availability, and the lack of a didactic proposal.

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Objective: to design a didactic strategy for the training of students during the Ophthalmology outpatient clinic.
Methods: qualitative, descriptive research conducted in the Ophthalmology service of the Arnaldo Milián Castro University Clinical Surgical Hospital. Theoretical and empirical methods were used for the foundation and data collection, triangulation, and validation by expert criteria of a strategy based on the Summarize, Narrow down, Analyze, Probe, Plan, and Select method, as well as statistical-mathematical methods.
Results: the initial diagnosis showed as a strength the high student participation in the diversity of clinical cases, and limitations: scarce teaching feedback, weak theory–practice integration, limited time to interact with patients, and lack of resources; triangulation confirmed consistency between students and professors. A strategy organized into foundations, objective, and four stages was designed: diagnosis, planning, implementation, and evaluation, complemented with other didactic resources and a table of indicators. Expert assessment was favorable, with a Kendall's concordance coefficient = 0.87.
Conclusions: the product was assessed by experts as relevant and viable, and it strengthens clinical reasoning, autonomy, theory–practice integration, and the comprehensive training of the future physician.
MeSH: Ophthalmology; estrategies; students, medical; learning; teaching rounds; education, medical

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RESUMEN

Fundamento: la consulta externa de Oftalmología constituye el principal escenario de educación en el trabajo durante la formación inicial del médico en Cuba; sin embargo, persisten limitaciones vinculadas con la integración teoría–práctica, retroalimentación docente, disponibilidad de recursos y falta de una propuesta didáctica.
Objetivo: diseñar una estrategia didáctica para la formación de los estudiantes durante la consulta externa de Oftalmología.
Métodos: investigación cualitativa, descriptiva en el servicio de Oftalmología del Hospital Universitario Clínico Quirúrgico Arnaldo Milián Castro. Se emplearon métodos teóricos y empíricos para la fundamentación y recogida de la información, triangulación y validación

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por criterio de expertos de estrategia basada en el método *Summarize, Narrow down, Analyze, Probe, Plan* y *Select* y estadístico-matemático.

Resultados: el diagnóstico inicial evidenció como fortaleza la alta participación estudiantil en la diversidad de casos clínicos, y limitaciones: escasa retroalimentación docente, débil integración teoría–práctica, tiempo limitado para interactuar con pacientes y falta de recursos; la triangulación confirmó coherencia entre estudiantes y profesores. Se diseñó una estrategia organizada en fundamentos, objetivo y cuatro etapas: diagnóstico, planeación, implementación y evaluación, complementada con otros recursos didácticos y tabla de indicadores. La valoración por expertos fue favorable, con coeficiente de concordancia de Kendall =0.87.

Conclusiones: el producto fue valorado por expertos como pertinente, viable y fortalece el razonamiento clínico, la autonomía, la integración teoría–práctica y la formación integral del futuro médico.

DeCS: Oftalmología; estrategia; estudiantes de Medicina; aprendizaje; rondas de enseñanza; educación médica

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INTRODUCTION

Work-based education constitutes a fundamental pillar in medical training as it allows the integration of theory and clinical practice in real scenarios.[1] In particular, the outpatient clinic is one of the teaching spaces that contributes to the development of skills from initial training.[2]

Methodological diversification in medical education faces structural challenges in clinical training, especially in the outpatient clinic, where direct contact with the patient is a

privileged setting for the student to assume an active role and make their thought processes visible beyond the mere transmission of current information. This tension between traditional face-to-face training and new educational mediations requires didactic strategies that articulate real clinical experience with complementary didactic resources.[3]

The decrease in hospitalized cases caused by the development of ambulatory surgery has an impact on undergraduate teaching since the teaching-learning process has been shifting from the ward to the outpatient clinic.[1] Hence the need to approach the outpatient clinic as an organizational form of work-based education.

The Ophthalmology subject, taught in the fifth year of the Medicine degree, finds in the outpatient clinic its main teaching scenario for the student's clinical training. In this context, Gutiérrez *et al*.[4] state that various teaching methods can be used in clinical settings, including the Summarize, Narrow down, Analyze, Probe, Plan, and Select (SNAPPS) method. This consists of six steps that allow the student to structure the presentation of a case; it has an impact on improving empathy, communication, and professionalism, in addition to incorporating uncertainty into clinical reasoning.

Presenting or discussing clinical cases using SNAPPS encourages the learner to reflect on the patient's problem and its solution, rather than seeking easy answers. It is a good way to learn how to practice the clinical method.[4,5,6]

The outpatient clinic is a form of work-based education in Ophthalmology; it allows the training of the student in interaction with the patient in their environment, always supported by didactics;[5,6] however, very few articles addressing this topic in this medical specialty were found.

On this basis, the authors set out to design a didactic strategy for student training during the Ophthalmology outpatient clinic using the SNAPPS method.

METHODS

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A descriptive investigation with a dialectical-materialist approach was carried out, combining qualitative and quantitative methods, in the Ophthalmology service of the Arnaldo Milián Castro University Clinical Surgical Hospital, Villa Clara, Cuba. A purposive sample of 60 students (based on accessibility and relevance criteria) was selected from the fifth year of the Medicine degree at the University of Medical Sciences who were completing their rotation in Ophthalmology during the 2024–2025 academic year.

Theoretical-level methods were used:

- Analytical-synthetic: to determine the theoretical-methodological foundations of the outpatient clinic as an organizational form of work-based education and to interpret the information collected.
- Inductive-deductive: to determine the distinctive aspects of the didactic strategy.
- Systemic-structural-functional: to determine the structure and dynamics of the strategy.
- Modeling: to develop its graphic representation.

Empirical-level methods:

- Document analysis: in the review and extraction of information from the Study Plan E of the Medicine degree to analyze the characteristics of Ophthalmology as a subject and the didactic approach of the outpatient clinic.
- Student questionnaire and teacher interview: in the initial diagnosis to characterize the current state of the teaching process in the outpatient clinic.
- Data triangulation.

Statistical-mathematical methods: calculation of index numbers to determine the expert competence coefficient, Kendall's coefficient to test agreement among experts, descriptive statistics (percentages) to process expert assessments and student questionnaire results.

For the initial diagnosis, a structured questionnaire of seven questions (six closed-ended and one open-ended) was applied to the students to characterize:

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- The frequency of participation in the outpatient clinic.
- The organization of the process.
- The most relevant aspects for learning, the quality of tutoring.
- The skills developed.
- The perceived difficulties.
- Suggestions for improvement.

The open-ended question was analyzed through thematic categorization, delving into the duration of the rotation, diversity of settings, use of simulations, and availability of resources.

Simultaneously, a semi-structured interview was conducted with the 10 professors to explore the organization of the setting, didactic strategies used, evaluation methods, difficulties, and proposals for improvement. Content analysis generated complementary teaching categories. Data triangulation was then carried out through systematization, thematic coding, and cross-interpretation.

The construction of the strategy was carried out based on the integration of the diagnostic results. The systemic-structural method and modeling were used to organize the proposal into foundations, general objective, and articulated stages (diagnosis, planning, implementation, and evaluation).

The central axis was the adaptation of the SNAPPS method to the Ophthalmology outpatient clinic, for which a specific methodological guide was developed, complemented by an observation sheet for cases, guidelines for designing the rotation schedule by subspecialty, a rubric for evaluating student performance, a guide for discussing clinical cases, and a table of indicators for global evaluation.

The strategy was assessed using expert criteria. A panel of 19 experts with a high level of competence was formed. A questionnaire with two parts was applied: self-assessment of the competence coefficient (K) based on argumentation sources, and assessment of 12 aspects

of the strategy, using a five-category Likert scale (Very adequate, Quite adequate, Adequate, Somewhat inadequate, Inadequate).

In statistical processing, index numbers were calculated to determine the expert competence coefficient, and Kendall's W test was applied to assess agreement among their judgments on the 12 variables. Data were processed using SPSS version 22.0, assuming a significance of $\alpha = 0.05$. Additionally, descriptive statistics (minimum, maximum, mean, and standard deviation) were used to summarize the assessments, and a qualitative analysis of the observations was performed to refine the proposal.

During the application of the instruments, the voluntariness of participation and confidentiality of the information were respected, guaranteeing the use of data exclusively for academic purposes.

RESULTS AND DISCUSSION

The diagnostic questionnaire applied to the 60 students allowed characterizing the state of the teaching process in the Ophthalmology outpatient clinic as an organizational form of work-based education. 85% reported always participating and 15% frequently, which confirmed high exposure to the clinical setting. The organization of the clinics was rated as well organized by 70%, fair by 25%, very well organized by 5%, and poorly organized by 5%.

Regarding the most relevant elements for learning, 90% highlighted the observation of clinical cases and 85% the application of ophthalmological techniques; 60% pointed out theory–practice integration, 35% interaction with patients, and 25% teaching feedback, showing the weight of practical activities, although with weaknesses in communication and feedback.

The quality of tutoring and supervision was rated as fair (45%), good (40%), and excellent (15%), showing perceived insufficient support. In terms of skills, semiological (80%) and

ophthalmological (75%) skills predominated, while clinical-diagnostic reasoning was the least developed (30%).

Among the difficulties, the following were noted: lack of time to interact with patients (65%), low availability of equipment or resources (60%), limited feedback (45%), difficulty integrating theory and practice (40%), and absence of a structured guide (35%).

As suggestions, 55% proposed increasing rotation time, 50% rotating through different clinics, and 30% improving resource availability, supporting the need for a specific didactic strategy.

The interview with professors showed that the outpatient clinic is organizationally structured, but with scarce teaching-care integration and no defined pedagogical design.

They highlighted as strengths: active student participation, diversity of clinical cases, and faculty commitment; and as limitations: lack of time for content explanation and case analysis due to care burden, insufficient planning of independent work, scarce feedback, predominant use of expository methods, absence of homogeneous methodological criteria, weaknesses in performance evaluation, and lack of resources.

As suggestions, they proposed diversifying rotations by subspecialty, strengthening training in emergencies and pediatric ophthalmology, structuring clinical discussions, unifying pedagogical criteria, designing rubrics and evaluation indicators, and improving feedback.

Description of the strategy for initial training in Ophthalmology: Summarize, Narrow down, Analyze, Probe, Plan, and Select (SNAPPS)

Figure 1 represents the synthesis of the structure of the elaborated strategy, with its main thematic axis: foundations, general objective, diagnosis, planning, implementation, and evaluation.

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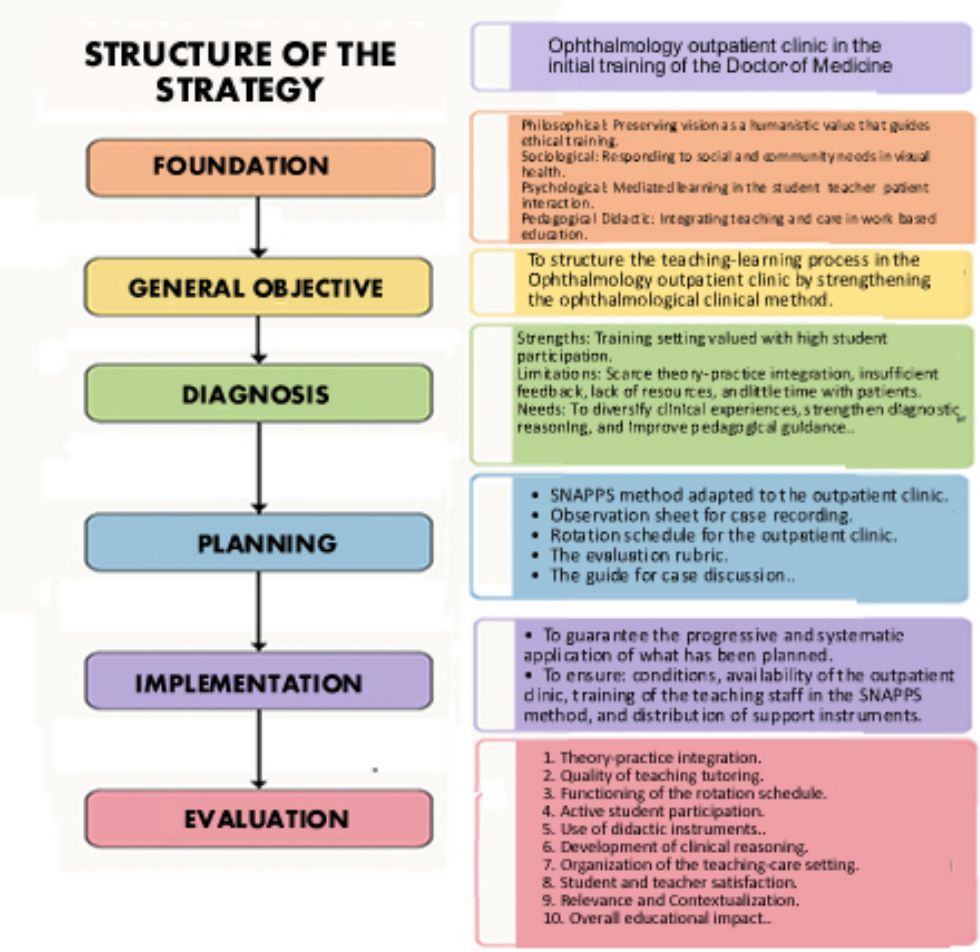

Fig. 1. Structure of the strategy

Source: own elaboration

Foundations of the strategy:

- Philosophical: it was based on the Marxist-Leninist and humanist conception, considering the preservation of vision as an essential ethical principle of ophthalmological care, due to its impact on autonomy, quality of life, and human dignity.
- Sociological: it responded to a community-based, preventive, and equitable approach, recognizing the outpatient clinic as the main setting for addressing visual problems in Cuba. The student understands the social determinants of visual health,

the influence of the socioeconomic environment on ocular pathologies, and the importance of timely access to specialized services.

- Psychological: It was supported by Vygotsky's historical-cultural approach, which conceives learning as a social process mediated by interaction. In the outpatient clinic, this is materialized in the student's active participation in clinical care, where direct experience with the patient is the basis for knowledge construction.
- Pedagogical and didactic: it was based on work-based education as an essential form that integrates teaching, care, and research. In the outpatient clinic, this is expressed in the adaptation of the SNAPPS method focused on the student's active participation in examination, diagnostic discussion, and clinical follow-up, organizing human and material resources to take advantage of the clinical setting and strengthen the ophthalmological clinical method and theory-practice integration.

Objective of the strategy: to structure the teaching-learning process in the Ophthalmology outpatient clinic by strengthening the ophthalmological clinical method, theory-practice integration, active student participation, and systematic teacher guidance through the SNAPPS method, to contribute to the development of professional, communication, and ethical skills in student training.

Strategic planning:

Action 1: a methodological guide was developed to apply the SNAPPS method in the outpatient clinic, built together with the teachers and discussed in a methodological meeting. This guide constitutes the central resource to guide step by step the implementation of the method in the clinical setting. Below is the SNAPPS method adapted to the ophthalmology outpatient clinic.

S – Summarize

Objective: to present the narrative focused on the ophthalmological problem.

The student briefly summarizes the reason for consultation and relevant clinical data, focusing on frequent symptoms, personal and family history, previous treatments, and key findings of the eye examination.

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N – Narrow down

Objective: to differentiate frequent ocular syndromes and identify the focus of the problem.

The student delimits the central ophthalmological problem and frames it according to the type of case (new, follow-up, or diagnostic reassessment), proposing probable differential diagnoses.

A – Analyze

Objective: to argue the diagnosis based on specific findings.

The student compares differential diagnoses or interprets the evolution of the case, explaining why one entity is considered more likely than another, relating symptoms, biomicroscopic signs, previous results, and clinical evolution.

P – Probe

Objective: to ask focused questions to clarify doubts.

The student explicitly expresses their doubts and asks the teacher questions about aspects they do not master: clinical differences between diagnoses, interpretation of tests, severity criteria, referral to subspecialties, or treatment adjustments.

P – Plan

Objective: to argue the procedure to follow.

The student proposes a reasoned management plan for the patient: treatment, hygienic-environmental measures, follow-ups, alarm criteria, complementary tests, or referral to subspecialties.

S – Select

Objective: to consolidate content and develop independent study habits.

The student chooses an aspect of the case to study in greater depth as a self-study task, to be resumed in a later session, so that SNAPPS does not end in the consultation but extends toward self-training and continuous learning.

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Action 2: A structured form was designed for the observation and analysis of clinical cases, which functions as a basic resource to record relevant patient information, organize clinical reasoning, and facilitate subsequent reflection on the diagnostic and therapeutic process that takes place in the outpatient clinic. It is organized into three parts: identification (reason for consultation, essential clinical data, and presumptive diagnosis); clinical record (relevant symptoms, ophthalmological examination findings, and diagnostic-therapeutic management); and a reflective section (doubts, aspects to deepen, and key learnings), guiding clinical reasoning and subsequent discussion with the teacher.

Action 3: It aims to diversify rotations in subspecialties, using basic equipment corresponding to each area and a previously organized rotation schedule, accompanied by discussion spaces to analyze experiences and enrich student training.

Action 4: An evaluation rubric was designed, visible in Table 1, discussed through debate with the participants. It evaluates the student's overall performance in the Ophthalmology outpatient clinic using four central criteria, which allow for a systematic and coherent assessment of their performance during the rotation:

- First: application of the SNAPPS method to the assigned case, considering aspects ranging from partial or total omission of the steps to their complete, articulated execution with the ability for creative integration and critical analysis.

- Second: technical-clinical mastery, which includes skill in the use of ophthalmological equipment, correct performance of the ocular physical examination, and pertinent interpretation of findings.

- Third: participation in the remaining cases of the consultation, assessing the appropriate use of the observation guide, the quality of contributions in collective discussions, and the level of involvement in the service dynamics.

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- Fourth: ethical and professional attitude, examining the quality of communication with patients and the healthcare team, responsibility, respect, and the student's general conduct in the care setting.

Table 1. Evaluation rubric

Criterion	2 (Insufficient)	3 (Aceptable)	4 (outstanding)	5 (Excellent)
SNAPPS Application (assigned case)	Omits 3 or more steps of the method. Incomplete summary and superficial analysis.	Applies the steps mechanically. Basic summary, but without analytical depth.	Develops all steps fluently. Well-founded analysis and relevant questions.	Creatively integrates the steps. Critical analysis, highlights complex relationships, and asks pertinent questions.
Technical-clinical mastery	Inadequate handling of equipment. Errors in physical examination. Does not interpret findings.	Basic handling of equipment. Structured physical examination, but omits details. Elementary interpretation.	Safe handling of equipment. Complete physical examination. Interprets findings and relates them to the diagnosis.	Expert handling of equipment. Thorough physical examination. Interprets subtle findings and integrates them into reasoning.
Participation in other cases	Passive. Makes no contributions. Does not use the observation guide.	Observes but participates only when prompted. Sporadic use of the guide	Actively participates with pertinent comments. Systematically uses the observation guide.	Leads discussions, contrasts approaches, and enriches collective analysis. Contributes from the observation guide.
Attitude and ethics	Does not establish an empathetic relationship with patients. Passive or unprofessional attitude.	Basic and respectful communication. Complies with norms but without initiative in care.	Empathy and effective communication. Anticipates patient and team needs.	Role model of professionalism. Generates trust, exceptional management of the doctor-patient relationship.

Source: own elaboration.

Action 5: it aims to strengthen theory-practice integration through a guide for case discussion, the use of updated bibliography, and the design of short seminars prior to the outpatient clinic. These activities are developed through debate to favor the student's theoretical preparation before contact with the patient and the articulation of content with clinical experience.

The guide for case discussion has the general objective of analyzing cases to integrate theory and practice before the outpatient clinic. Its structure is organized into three basic moments:

1) Synthetic presentation of the case by a student.
2) Guided analysis, through questions about possible differential diagnoses.
3) Reflective closure, agreeing on the probable diagnosis, initial management, and theoretical aspects that the group should review.

This guide indicates working in small groups with defined roles (presenter, moderator, and rapporteur) and always using real cases that will later be seen in the consultation, so that with these elements any teacher can reconstruct and apply it.

Action 6: focused on training the teaching staff in the application of the strategy, for which a teacher training schedule is developed and debates and workshops are organized. These training actions allow for unifying methodological criteria, strengthening the pedagogical competencies of the professors, and guaranteeing a coherent implementation of the strategy in the Ophthalmology outpatient clinic.

The results of the expert criteria show a high level of consensus in the assessment of the designed didactic strategy:

- Kendall's concordance coefficient ($W = 0.87$; $p > 0.05$) showed a statistically significant agreement among the judgments issued by the 19 specialists, which reinforces the robustness, reliability, and consistency of the evaluation carried out.

- Overall, the experts agreed that the strategy is relevant, coherent, applicable to the real context of work-based education, and of high pedagogical value.
- Qualitatively, they highlighted the internal coherence of the proposal, noting that the strategy allows for a smooth transition from the initial diagnosis to concrete training actions and that it realistically responds to the conditions of the Cuban health system, characterized by high care demand and limited resources.
- They rated as Very adequate the alignment between diagnosis, objectives, and actions, as well as the stage-based structure and the integration of instruments such as the adapted SNAPPS method, the observation sheet, the rotation schedule, the rubric, and the case discussion guide.
- In particular, they considered that the adaptation of the procedure constitutes one of the most relevant contributions, maintaining the conceptual rigor of the original model while incorporating the specific elements of ophthalmological practice.
- They identified areas for improvement that were incorporated into the final design: the need to strengthen the pedagogical training of the faculty to ensure a homogeneous application of the method, develop complementary materials for student preparation, foresee flexible alternatives in high-demand consultations, and establish continuous evaluation mechanisms for the strategy using specific indicators.

These suggestions translated into concrete adjustments, such as the inclusion of short seminars, the early assignment of patients, and a table of indicators for monitoring.

In summary, expert assessment recognizes the strategy as a solid, viable, and transformative proposal for improving the teaching-learning process.

Work-based clinical medical education constitutes a central axis in competency development, particularly in specialties with high outpatient volume such as Ophthalmology.[7] The results demonstrate that, despite high student participation and the diversity of clinical cases in the outpatient clinic, structural limitations persist that affect the quality of the training process, coinciding with the international literature on clinical education in outpatient settings.[8,9]

The designed didactic strategy focused on adapting the SNAPPS method to the ophthalmology clinic, responds to the need to structure the student-patient-professor interaction, and promotes active and reflective learning. This approach aligns with contemporary educational models that emphasize clinical reasoning and evidence-based decision making.[10]

The implementation of structured guides, such as the observation sheet and the evaluation rubric, facilitates the standardization of the training process, a critical aspect identified in previous studies on variability in clinical teaching.[11]

The adaptation of the six steps of SNAPPS to ophthalmological practice allows addressing distinctive features of the specialty. This contextualization is consistent with the principle of curricular relevance and with successful experiences of implementing the method in other clinical disciplines.[4,12,13]

Validation by expert criteria, with a high concordance coefficient (w=0.87), supports the robustness and applicability of the proposal. Experts versed in the subject have highlighted the coherence between diagnosis, objectives, and actions, as well as the integration of complementary instruments, assessments identified in studies that point to the importance of systematic design and formative evaluation in innovative educational strategies.[14] However, as some researchers have noted,[15,16] successful implementation requires not only a robust design but also teacher training and the availability of basic resources. Pedagogical training of the faculty is essential to guarantee a homogeneous application of the method and quality feedback.

The strategy integrates formative evaluation elements through the rubric, promoting progressive performance assessment and timely feedback. This aligns with current trends in medical evaluation that prioritize direct observation, guided reflection, and the development of transversal competencies.[8,17]

The proposal is based on the context of the Cuban health system, characterized by a preventive-community approach and teaching-care integration. This contextualization is a

strength, since educational strategies must respond to the characteristics of the setting where they are implemented, considering available resources, epidemiological profile, and care model.[18,19] The strategy aligns with contemporary calls for more responsive medical education focused on specific needs.[19]

The proposal to establish rotations by subspecialty, the SNAPPS guide, and case discussion promote the student gaining confidence and responsibility gradually, coinciding with the central principle investigated by Ten Cate *et al*.[20]

Scientific contribution

The main scientific contribution is the design of a didactic strategy for the development of the outpatient clinic, and its novelty lies in energizing the components of the teaching-learning process by integrating the development of professional and socio-emotional skills with theoretical and practical knowledge, guiding the student during the consultation to offer personalized patient care.

CONCLUSIONS

A didactic strategy using the SNAPPS method was designed and validated by expert criteria, characterized as coherent, structured, and contextualized to the Ophthalmology outpatient clinic; in addition to integrating theoretical foundations, it includes articulated stages to enhance clinical reasoning, active participation, and theory-practice integration in the initial training of the physician.

BIBLIOGRAPHIC REFERENCES

1. Martínez-Asanza D. Acerca de la educación en el trabajo, principio rector de la educación médica cubana. FEM [Internet]. 2021 [cited 09/11/2025];24(6):325-325. Available at: https://dx.doi.org/10.33588/fem.246.1158

2. Gordillo C, Chaparro RL, Briceño JA. MundofisioCG como una estrategia pedagógica innovadora basada en TIC para transformar la formación de fisioterapeutas en Consulta Externa. PARADIGMA [Internet]. 2024 [cited 29/12/2025];31(52):125-38. Available at: https://camjol.info/index.php/PARADIGMA/article/view/19495

3. Lifshitz-Guinzberg A, Abreu-Hernández LF, Sepúlveda-Vildósola AC. Pros y contras de las innovaciones en educación médica. Gac Med Mex [Internet]. 2021 [cited 29/12/2025];157(3):338-348. Available at: https://doi.org/10.24875/gmm.20000688

4. Gutiérrez-Cirlos C, Naveja J, Sánchez-Mendiola M. Modelos de educación médica en escenarios clínicos. RIEM [Internet]. 2020 [cited 29/12/2025];9(35):96-105. Available at: https://doi.org/10.22201/facmed.20075057e.2020.35.20248

5. Estrabao S, Pérez D, Manso AM, González IL, Ramón G. Análisis al programa de la asignatura Oftalmología plan D. EdumedHolguín [Internet]. 2021[cited 29/12/2025]; Holguín: Sociedad Cubana de Educadores en Ciencias de la Salud de Holguín; 2021. p. 1-10. Available at: https://edumedholguin2021.sld.cu/index.php/edumedholguin/2021/paper/view/471/0

6. Gutiérrez-Cirlos C, Naveja JJ, Sánchez-Mendiola S. Enseñar didáctica: recorridos para un paradigma propositivo. Chile: Editorial Miño y Davila; 2023 [cited 29/12/2025]. Available at: https://books.google.ch/books?hl=es&lr=&id=wrq7EAAAQBAJ&oi=fnd&pg=PT2&dq=Guti%C3%A9rrez-Cirlos+C,+Naveja+JJ,+S%C3%A1nchez-Mendiola+S.+Ense%C3%B1ar+did%C3%A1ctica:+rec#v=onepage&q&f=false

7. Almarales YE, Montañez MM, Velázquez FF, Almarales YE, Aguedo DP. Competencias profesionales específicas del oftalmólogo de la Atención Primaria de Salud en afecciones oftalmológicas pediátricas. Ciencias Holguín [Internet]. 2025 [cited 29/12/2025];31(3):[aprox. 15 p.]. Available at: http://www.ciencias.holguin.cu/revista/article/view/419

8. Tambone MA. Mejora de la evaluación y/o acreditación de los procesos de enseñanza y aprendizaje en la instancia práctica de la asignatura Práctica Profesionalizante II-Carrera de Licenciatura en Enfermería [tesis]. Argentina: Universidad Nacional de La Plata; 2025. Available at: https://sedici.unlp.edu.ar/handle/10915/180646

9. Gómez Guzmán M, Sánchez Polo M, Zarzuelo Romero MJ, Fernández Varón E, Duarte Pérez JM, Gálvez Peralta JJ, Fuentes Senise C. Elaboración de casos clínicos por el alumnado como estrategia para mejorar su preparación para afrontar la Evaluación Clínica Objetiva

Estructurada (ECOE) [proyecto de innovación docente]. España: Universidad de Granada; 2024. Available at: https://digibug.ugr.es/handle/10481/95764

10. Torre D, Durning S. Social cognitive theory: thinking and learning in social settings. In: Cleland J, Durning SJ, editors. Researching Medical Education. Universidad Icesi: Wiley Blackwell; 2022. p. 45-56.Available at: https://onlinelibrary.wiley.com/doi/abs/10.1002/9781118838983.ch10

11. Ramani S, Könings K, Ginsburg S, van der Vleuten C. Feedback redefined: principles and practice. J Gen Intern Med [Internet]. 2019 [cited 29/12/2025];34(5):744-749.Available at: https://link.springer.com/article/10.1007/s11606-019-04874-2

12. Grunewald ST, Lucchetti A, Grunewald T, Vale A, Silva L, Silva Feliciano C, Lucchetti G. One-Minute Preceptor, SNAPPS, and Traditional Teaching in the Acquisition of Clinical Reasoning Skills by Medical Students. Medical Science Educator [Internet]. 2025 [cited 29/12/2025];35(2):823-35. Available at: https://link.springer.com/article/10.1007/s40670-024-02241-3

13. Teixeira Ferraz S, Grünewald T, Ezequiel OS, Lucchetti AL, Lucchetti G. One-minute preceptor and SNAPPS for clinical reasoning: a systematic review and meta-analysis. Internal Medicine J [Internet]. 2023 [cited 29/12/2025];53(5):680-89. Available at: https://onlinelibrary.wiley.com/doi/abs/10.1111/imj.16005

14. Harden RM, Laidlaw JM. Essential skills for a medical teacher: an introduction to teaching and learning in medicine. 3ed. Churchill Livingstone: Elsevier; 2021 [cited 29/12/2025]. Available at: https://scholar.google.com/scholar?hl=es&as_sdt=0%2C5&q=Harden+RM%2C+Laidlaw+JM.+Essential+skills+for+a+medical+teacher%3A+an+introduction+to+teac

15. Fong W, Jones L. Novice clinician educator professional identity formation through a longitudinal mentorship: a qualitative study. BMC Medical Education [Internet]. 2024 [cited 29/12/2025];24(1):12-24. Available at: https://link.springer.com/article/10.1186/s12909-024-06206-3

16. Al-Omary H, Soltani A, Stewart D. Implementing learning into practice from continuous professional development activities: a scoping review of health professionals' views and experiences. BMC Med Educ [Internet]. 2024 [cited 29/12/2025];24(1):1031-32. Available at: https://doi.org/10.1186/s12909-024-06016-7

17. Rosemblatt Bono M. Desarrollo e implementación de un sistema integral de evaluación basado en competencias clínicas en un programa de especialidad médica en anestesiología [tesis]. Chile: Universidad del Desarrollo. Facultad de Educación; 2025. Available at: https://repositorio.udd.cl/items/b36b8003-ea72-48eb-9f7b-3ab04283c653

18. McKenzie-White J, Mubuuke AG, Westergaard S, Munabi IG, Bollinger RC, Opoka R, Kiguli S. Evaluation of a competency based medical curriculum in a Sub-Saharan African medical school. BMC medical education [Internet]. 2022 [cited 29/12/2025];22(1):724-35. Available at: https://link.springer.com/article/10.1186/s12909-022-03781-1

19. Khanpoor H, Amerzadeh M, Alizadeh A, Khosravizadeh O, Rafiei S. Developing a responsive model to societal needs in medical education. BMC Medical Education [Internet]. 2024 [cited 29/12/2025];24(1):370-85. Available at: https://link.springer.com/article/10.1186/s12909-024-05355-9

20. Ten Cate O, Carraccio C, Damodaran A. Entrustment decision making: extending Miller's pyramid. Acad Med [Internet]. 2021 [cited 29/12/2025];96(2):199-204. Available at: https://journals.lww.com/academicmedicine/abstract/2021/02000/entrustment_decision_making__extending_miller_s.32.aspx

Declaration of interests

The authors declare no conflict of interest.

Author contributions

Conceptualization: Niurka Pérez Vázquez, Lillian Gloria León Veitía, Keilym Artiles Martínez, Juana Nancy Luis Fernández

Data curation: Niurka Pérez Vázquez, Lillian Gloria León Veitía, Keilym Artiles Martínez, Neyda Alina González Pérez, Juana Nancy Luis Fernández

Formal analysis: Niurka Pérez Vázquez, Juana Nancy Luis Fernández, Elaine Teresa Gutiérrez Pérez

Investigation: Niurka Pérez Vázquez, Juana Nancy Luís Fernández

Project administration: Niurka Pérez Vázquez

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Methodology: Niurka Pérez Vázquez, Juana Nancy Luís Fernández, Neyda Alina González Pérez, Elaine Teresa Gutiérrez Pérez

Supervision: Juana Nancy Luis Fernández, Elaine Teresa Gutiérrez Pérez

Original draft: Niurka Pérez Vázquez, Juana Nancy Luis Fernández

Final manuscript writing: Niurka Pérez Vázquez, Juana Nancy Luis Fernández, Elaine Teresa Gutiérrez Pérez