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Project-based Learning Strategy: An Innovative Proposal for Local Education System

María Mercedes López López, Hilarión Vegas Meléndez and
María Rodríguez Gámez

Abstract--- *The educational and professional approach leads the individual to create strategies that allow them to develop knowledge in an active way, in order to trigger solutions to a problem. The purpose of this research is to study Project Based Learning (ABP), as an innovative proposal for the Local Education System, valuing the need that students have, to form meaningful learning in them, with critical, analytical and reflective thinking. The cognitive process also influences the application of ABP, such as the development of emotional intelligence that is part of the competencies and skills, which the teacher must encourage, to strengthen life expectancy, the training process, and the social environment. The applied methodology was carried out, by means of the field study, the direct observation, that in a qualitative and quantitative way, the educational institutions of Manta were studied, surveying thirty-four teachers and one hundred and forty-three students, to give precision, efficacy and efficiency to the results, the deductive-inductive, heuristic methods, induced that according to the applied surveys, it can be known that 29% of teachers use the project-based learning methodology, evidencing that 38% of students develop critical, analytical and reflective thinking through meaningful learning. As for the students, it was evidenced by 28% that when carrying out a project they are interested in knowing the study problem.*

Keywords--- *Education System, Innovation, Learning, Methodological Strategy, Project.*

I. INTRODUCTION

Education is a formative process that allows the individual to display cognitive capacity, intellectual knowledge, the development of skills, abilities, and strengthening of values, leading to emotional intelligence. The *exordio* of the investigation denotes necessary aspects that the Local Educational System (SEL), must make present to the innovative pedagogical methodologies. To talk about innovation is to lead to a strategic approach to the learning methodologies that Mineduc has implemented to improve education, however, it needs strengthening that allows the teacher a continuous training, for the preparation of the challenges of project-based learning (ABP), being essential to have references that incites to know the educational system at country level.

For Didridksson (2017), from the National Autonomous University of Mexico (UNAM) "Educational change in Finland", describes that the educational system of that country prioritizes the assurance of teaching work, based on professional dignity, social respect, which values the profession as a career for a lifetime, giving positive results to society. The teacher training in that country focuses on both professional and personal academic competences, where the educator manages the learning process itself, to provide teaching with educational skills, which generates a theory according to the areas of study, motivating the knowledge of the pedagogical content and the didactics of the different subjects, according to the practice based on other methodologies.

María Mercedes López López, Pontificia Universidad Católica Del Ecuador, Portoviejo, Ecuador.
Hilarión Vegas Meléndez, Pontificia Universidad Católica Del Ecuador, Portoviejo, Ecuador.
María Rodríguez Gámez, Universidad Técnica De Manabí, Portoviejo, Ecuador.

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At the International University of La Rioja, they have dealt with the topic “Japan: a study of their educational system” here it is pointed out that the Japanese system bases three essential pillars in education: knowledge, morals and respect, the same ones that develop personality, internalizing the moral principles in learning, according to the code of coexistence, which is applied to the formation of values, standardizing discipline, feelings for the formation of culture and respect for the Japanese mentality (Mosquera, 2017; Mantra & Widnyana, 2019; Mendoza *et al.*, 2019).

In that region an essential role is shown in the educational framework, that is to say, that they develop the learning potential in values and in a project-based training, relating social life to the acquired knowledge. Taking this educational reference, it can be said that the Ecuadorian educational system needs to strengthen values so that a different expectation of knowledge is projected, which relates to the learning obtained with the quality of life in society. The educational system of Colombia, allows the student to integrate into the community, depending on age and skills, in order to seek personal fulfillment and integration of the social fabric through the inclusive academic itinerary (Beltrán, Martínez, & Vargas, 2015).

Despite the educational management of that country, education is aimed at methodological programs that strengthen knowledge, as in Ecuador, one of the innovations of both countries should be project-based learning. According to Cobo & Valdivia (2017) of the University Teaching Institute (PUPC), they allude that project-based learning is a methodology that is developed to work collaboratively, in order to propose proposal solutions to a given problem.

It is necessary to indicate that this strategic learning methodology has allowed the Peruvian education system to work cooperatively and collaboratively, both in the planning of teamwork and in the fulfillment of the objectives and goals, making the student improve the quality of social and educational life.Taking as a reference the theme of School Projects and learning for life in the development of the curriculum of Middle Basic General Education, developed at the Simón Bolívar Andean University, education should be focused on project-based learning, as it is a useful tool that allows meaningful knowledge in students, through integral education (Enriquez & Herrera, 2019; Rusmini *et al.*, 2018; Sulaeman *et al.*, 2018).

Project-based learning in Ecuador is a proposal that is oriented to the training of students, in the development of the quality of life for society, although this methodological strategy has been implemented, it is not properly applied, that meets the expectations of knowledge and in the context that students must have to connect to the reality of the educational, social and work environment within the classes taught by teachers.

The teaching and learning based on projects, takes advantage of the use of technology in the competences of the student, through an interdisciplinary competence integrating the levels of the educational component, articulating the training in cognitive contributions, skills, and empirical expertise, for the interaction between the individual, society and the identification of problems with solutions, which articulates the triangulation of the integrated system between student, teacher and research (Bazurto, Muñoz, & Loor, 2017).

The ABP, being a methodological learning strategy for innovation in education, was carried out under the inductive, deductive methods; In addition, the emphasis was placed on the field study, allowing a qualitative and

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quantitative analysis with the use of the heuristic method. The research aims to study the project-based learning strategy, as an innovative proposal for the Local Education System, a methodology that allows students to acquire skills in knowledge and skills, which today is the key to work and professional success.

II. MATERIALS AND METHODS

The research had as a basic modality, the field study through direct observation, to know the application of the ABP, in the educational institutions of the city of Manta, which is a qualitative and quantitative way was inferred in the institutional quality. The deductive-inductive methods established in the general study were applied to the particular; The heuristic method for the search for solutions in educational quality, the dialectical method, was part of this research through the communication of rectors and vice-rectors of the educational units.

As for the materials, it was evidenced through surveys applied to teachers and students electronically (Forms Office); The technology was used for the elaboration of graphic organizers, emphasizing that the ABP is a learning methodology that contributes to the critical, analytical and reflexive development of the students.

The sample for the application of the survey was determined with the equation (1)

$$n = \frac{Z^2 p.q.N}{Ne^2 + Z^2 p.q} \qquad (1)$$

Where:

n → Sample size 182

Z →Confidence level 1.96 (95%)

p →Positive variable 0.50

q →Negative variable 0.50

N →Population size

e →Accuracy of error 5% (0.05)

To know precisely the number of respondents of teachers and students, table 1 was established.

Table 1: Accuracy of teachers and students surveyed

Population			Sample
Institutions	Number of teachers	Number of students	
1	15	175	n = 182
2	10	40	Teachers: 34
3	15	40	Students:148
4	10	40	
	50	295	

Source: Own elaboration based on the data taken in the educational institutions of the local system.

III. THE LOCAL EDUCATION SYSTEM

Despite the difficulties that exist in education in Ecuador, UNESCO shows that teaching has improved in Language, Science and Technology, however, the reality in the educational institutions of Manta are different; Not

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all of them apply methodological learning in a strategic way that motivates the student to have an educational quality (Ministry of Education, 2017).It has been observed that in District 13D02 Jaramijó - Manta - Montecristi, educational institutions require strengthening for the implementation of methodological learning strategies, which affects the development of skills, abilities, cognitive processes and competencies that a student You must get in the study process.

It is necessary to emphasize, how other countries have developed educational quality, for example, Finland has had the key to success, through technical/professional training, prepare the student for life; teacher training is another key to success in that country, for continuing education, in teacher training, which helps the system to work fully, whether for autonomy, self-evaluation, the development of the skills of educators as of the students, motivating them to develop the cognitive processes in the skills and abilities (Stanley, 2016; Indriana, 2019; Kusumayanti & Dewantari, 2017).

The strategies employed by that country at the level of learning begin in preschool until university education, being in basic education, where they begin to prepare students for life, with freedom, values , and vocational guidance, leading to students, have insight into problem situations and solutions, attention in solving a situation, through an initiative, taking into account the criteria, analysis and reflection, to achieve the objectives.

The local education system, when implementing learning strategies, must commit teachers to compulsory continuous training, where the evaluation is permanent, for the contribution of Ecuadorian educational quality. This would allow students to obtain a better academic background.

IV. The Education System And Methodological Learning Strategies

he Ecuadorian education system has become part of the innovation of methodological learning strategies, taking as an initiative the school projects (PE), which leads to tasks and strategies, which the teacher must encourage the student to perform, as a learning process flexible and playful, to solve a problem, under the proposal of an assigned theme of interest. The EP, is accentuated to interactive learning, where it prioritizes team participation, on a topic of common interest, is applied under the project-based learning methodology, as an interdisciplinary approach, which allows the stimulation of learners, through a collaborative work, research and generator of social skills (Ministry of Education, 2019).

The methodological strategy of the EP has been adjusted to student-centered learning, in order to promote research and integration of students, before the participation of the educational community in the promotion of entrepreneurship, interdisciplinarity through innovation, which is Applied in the elementary, middle and upper secondary (EGB) sub-levels). Figure 1 shows the school project (PE) - methodological learning strategy, also how school projects issued by the local education system employs active and dynamic training for students as well as teachers. Educators must provide students with interactive, collaborative learning through an interdisciplinary product preparing them for life in order to acquire commitment, cooperation through tasks and topics of interest.

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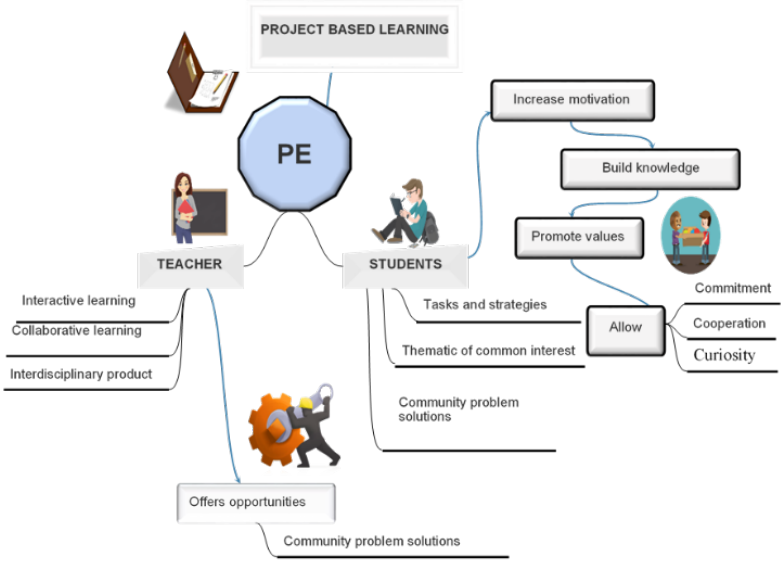

Figure 1: School Project (PE) - methodological learning strategy

The ABP, started with constructivism, Dewey relates active and study learning to the close relationship of the real context, emphasizing the social environment, which relates life and education; Kilpatrick defines education by projects as the scope of the objectives through an action-oriented to the social context, analyzing the problems or situations of society (Panjón & Tigre, 2017).

Through this learning methodology, students plan their own research activities, allowing the student to work them in all subjects, that is, they can apply projects in Natural Sciences, Social Sciences, Language and Literature, Artistic Cultural Education and even in Mathematics, Language Foreign and Physical Education. An ideal EGB-Preparatory project is to unify all subjects linking the educational community to the age of the children; As for the EGB - Elementary and Media they can be applied through interactive and playful games and the EGB - Superior, they can already implement basic research notions.

Regarding the Baccalaureate, the Student Participation Program (PPE), seeks to raise awareness of the problems of the educational community and the expanded community, through interdisciplinary educational ventures, which commit students to work collaboratively and cooperatively in the development of skills, perseverance, and communication, under the application of project-based learning (Ministry of Education, 2019).

It is necessary to emphasize that the EPP, through projects helps to identify a problem, activating previous knowledge, allowing to work in a collaborative and cooperative way to reach the solution of the problem. Within the development of life skills, students generate skills such as empathy, feeling and imagining, what another person needs, emotionally unfolding leaving behind judgments and fears, respecting the differences of others. The PPE, to have an institutional coordinator, in each of the Educational Units, in order to plan, guide and advise the responsible teachers, socializing the students to work collaboratively, sought a solution to the problem raised.

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The Student Participation Program also relates to the exit profile of the Ecuadorian bachelor, strengthening teamwork, in a responsible and social way, consolidating project-based learning to cooperation and peaceful coexistence between peers. On the other hand, the ABP through the PPE channels the creative and expressive abilities of the students, being part of concrete actions under a vision of social reality and the construction of effective strategies for the prevention and solution of a problem (Ministry of Education, 2019).

The PPE, when working with the ABP methodology, fosters in students, innovative capacities that lead to a cognitive process of reflection and expression for the construction of interdisciplinary educational ventures, strengthening research, collaboration, and active participation capacities. Among the fields of action that apply in Student Participation Program are coexistence, healthy life, cultural art, environment and technological innovation. The learning cone that shows the PPE, based on ABP, arises in the design, analysis, creativity of teachers towards learners. The teacher plays a fundamental role in the learning situation, this program allows you to carry out projects solving difficulties and controlling the pace of work to achieve success and evaluate the results.

In Figure 2. It shows the constructive process that allows the PPE, of how it helps to identify a problem, how it can help to be part of the solution as an incentive for the quality of life.

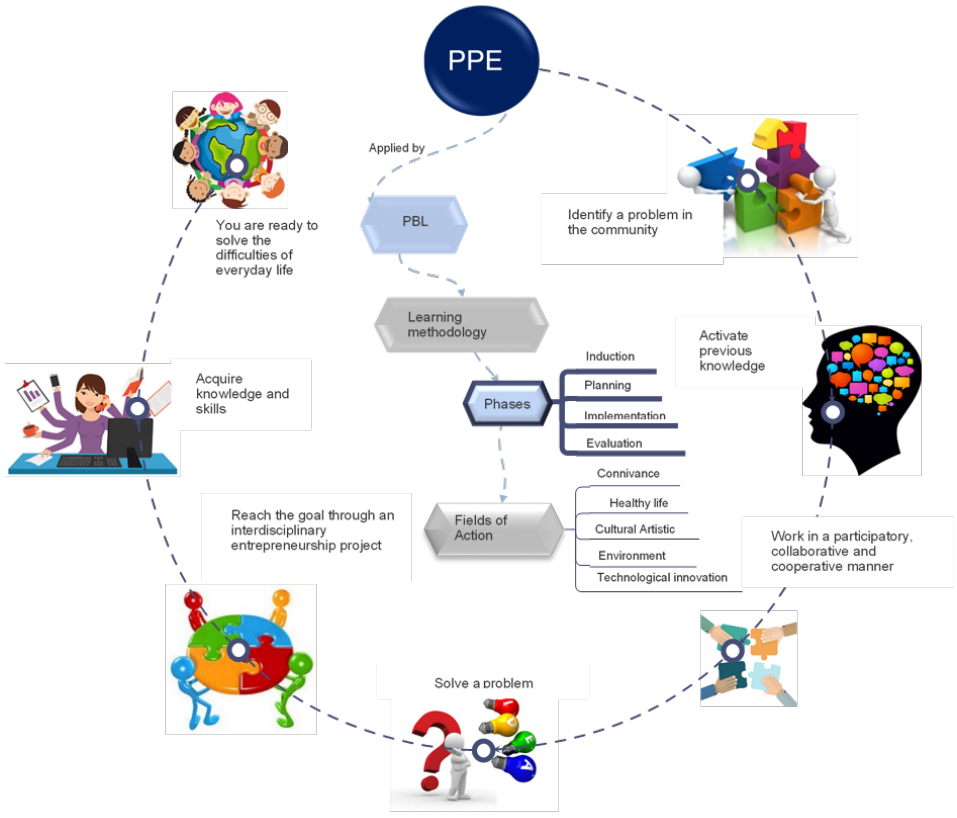

Figure 2: Construction process of the Student Participation Program (PPE)

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V. METHODOLOGICAL STRATEGIES IN LEARNING AND TECHNOLOGY

Learning methodologies are linked to technology, enabling it to be innovative and interactive for students, it is noteworthy to characterize that these strategies favor the cognitive, affective and psychomotor procedure path, developing fundamental bases in the critical, analytical and reflexive thinking that It is the essence for the resolution of problems that are in the environment and that every time increases with the educational Tics.The educational strategies help the teacher to have innovative resources at the time of imparting knowledge to the students, take the integral language as part of the avant-garde attitude, where research and technology are didactic resources for the stimulation of meaningful learning, transforming into pedagogical innovation (Cruz, Criollo, & Raffo, 2017).

Currently, digital technology is covering the field of education and linked to project-based learning is focusing on an innovative strategy for teaching-learning. There are eight methodological learning strategies that motivate the teacher to be innovative. The methodological strategies are linked in the application of methods, techniques, and procedures that allow systematizing representative transformations in cognitive abilities and abilities. Teachers through methods and techniques aim to provide effective educational process management so that students are aware of being protagonists of their own learning (Garcia Centeno & Flores Fajardo, 2016; Novayanti *et al.*, 2018; Partha *et al.*, 2019).

The methodological strategies are linked to technology, this being the basis of innovation that has allowed us to develop great opportunities in the educational, labor and professional fields. The methodological learning strategies are related to the same purpose that is to develop the skills and abilities of the students. As shown in Figure 3, the learning strategies that an innovative teacher must apply motivate students in the classroom, allowing spontaneity, reflective criticality.

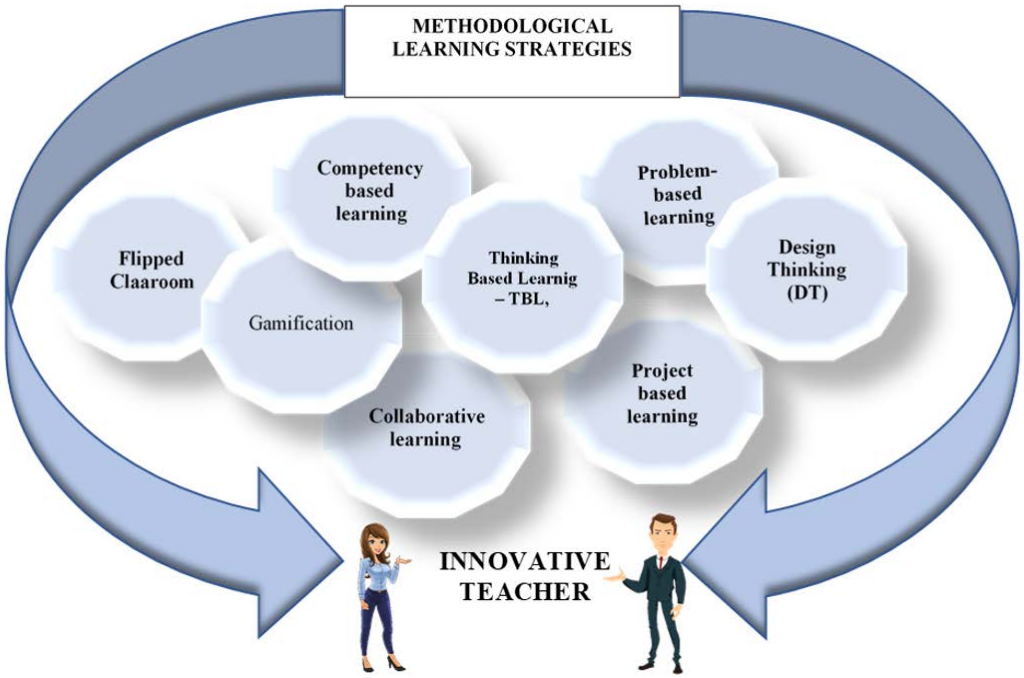

Figure 3: Methodological learning strategies

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The inverted classroom (Flipped Classroom), aims to optimize time in the classroom, cooperatively developing a project; Project-based learning (ABP), allows to create competences in the student, with the elaboration of projects, which give answers to a problem of daily life, is also applied through the new information and communication technology; Collaborative learning is another methodological strategy that externalizes group work, improving attention, communication and, above all, the acquisition of basic knowledge for the development of learning.

Gamification contributes to the strategic methodology by integrating the dynamics of educational video games, through educational technology (EdTech), which is a tool that innovates in the learning process; Problem-based learning is another methodology, which attributes the development of critical thinking and creative skills in problem-solving. Design Thinking (DT), as a learning methodology, identifies the student's individual problems, creating interest in solving a situation exactly; Thinking Based Learning (TBL), develops skill in the learner, taking into account the analysis, relationship, effective argument.

Competency-based learning is a methodological strategy that promotes teacher's tools and solutions for active, comprehensive and interdisciplinary knowledge, with open and flexible processes for the development of work skills (Vidal *et al*., 2016; Borris & Zecho, 2018; Dewi & Ramantha, 2019).These methodological learning strategies help the teacher to teach interactive and innovative classes that, linked to the technological process, make teaching an integral education, such as the Marist model, which promotes the formation of students, managing to discover their own abilities, through the development of cognitive processes as an individual.

In the Marist Educational Model, the student develops thinking and decision skills, learning to be, do, know, decide, live together, serve and love, through the spiritual, bodily, affective, ethical-political, cognitive, aesthetic, ecological dimension that from a project can be carried out (Marista, 2019; Ratnawati *et al*., 2019; Rohani, 2019).

VI. PROJECT-BASED LEARNING (ABP)

The ABP is a teaching methodological strategy, where the main protagonist is the student, who develops classroom projects, with the purpose of applying acquired knowledge, be it of a product or processes they put into practice. The local education system, works with project-based methodological learning strategies, despite the implementation, certain educational institutions of the city of Manta, do not execute it properly, creating a deficiency in the required curricula programs, not having an accompaniment Efficient teacher-student, there is no quality learning.

Project-based learning (ABP), allows to enhance the most complex difficulties, causing self-learning, to know how to pose a problem, leading to the solution, idea, creativity, collaboration and scientific research (López, 2018; Li & Huan, 2019; Mantra *et al.,* 2019).The ABP is an educational strategy, which leaves behind the traditional, mechanical and memoiristic system, allowing to work with contributions and solutions, according to the assigned theme, it is a collaborative work that promotes awareness and integration in interdisciplinary relationships, with methodological tools that motivate to solve the most complex problems.

For Valcárcel and Gómez (2017), project-based learning is a teaching and learning modality, which is focused on autonomous and collective processes, applying didactic strategies to explore and discover by channeling into

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scientific research with searches for new solutions. The ABP, in education, transforms the knowledge of the students allowing them to investigate in a scientific way, organized and planning the research and then be evaluated in order to create significant opportunities. Figure 4 shows the APB as a planning tool.

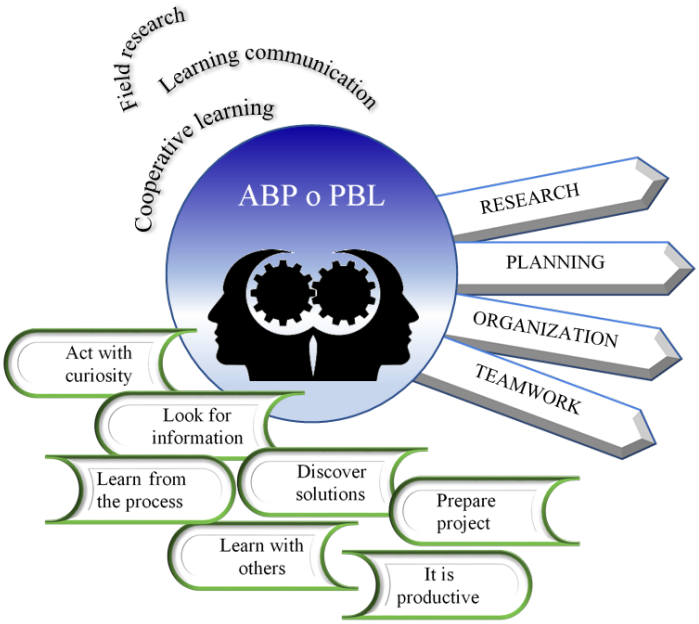

Figure 4: Project-based learning

The educational institutions of the local system, through the projects, must motivate the students to be researchers, regardless of the areas, the specialties, and even the professions, since the ABP is a complete learning strategy that generates significant knowledge, collaborative and cooperative, so that the student seeks solutions to the various problems of society.

VII. ABP AND MEANINGFUL LEARNING

The ABP applied in the educational classrooms, generates significant learning, the teacher must be formative, motivating, in order for the student to discover the skills and abilities, both in research, as in solving problems, so that this way generates responsibility, commitment, objectivity and subjectivity to all human actions.Meaningful learning allows to develop cognitive skills in students, every teacher must perform methodological strategies in the classroom, through graphic organizers, schemes, the analysis that can be implemented in a project (López, 2019; Akpomedaye, 2019; Arini *et al.*, 2019).Therefore, ABP and meaningful learning go hand in hand in methodological strategies, leading to the student being a generator of ideas, seeking immediate solutions in any type of problem.

For Moreira (2019), meaningful learning allows the student to create new ideas, in order to develop the capacity, interpret and acquire new levels of knowledge, prioritizing teamwork, through collaborative and autonomous works that prioritize the prevalence of innovative teaching strategies. Currently, the educational institutions of the city, need strengthening in this type of learning, so that students, undertake innovative, creative projects and that are economic generators, being part of the development of society.

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The local education system must employ project implementation strategies and continuous training for teachers so that they can be taught with responsibility, quality, and warmth. The ABP, not only must be applied in higher years, but also basic years of education, so that they are driven from small, and strengthen that initiative of change for a better life. Generating research and entrepreneurship projects forms the cognitive learning process in students, because it infers, receives, captures, analyzes basic information that develops critical, analytical, reflective and creative thinking.

To speak of inferring is to take into account each one of the cognitive processes that students acquire in the process of educational training and also in daily experiences.

VIII. ABP IN THE DEVELOPMENT OF COGNITIVE PROCESSES

It has been shown that the application of ABP allows the individual to develop cognitive processes; which is defined as the acquisition of knowledge and interaction to capture, codify, store and understand all basic information, which comes from outside and from within, achieving adaptations of the social environment, in which it is lived as a form of survival.

Cognitive processes have to do with all information stored in the human brain, leading to that knowledge, being part of the situations of the surrounding social environment. The development of cognition is a process that must be strengthened as a child, through explicit representations, which allows triggering of the abilities and skills in the brain system. In Vygotsky's theory, the most representative observations were made on three objections about cognitive development in formal education: the systematic knowledge of children's daily knowledge, based on the spontaneous learning acquired by the child in nature; the discontinuity in the conceptual development, being considered as fundamental, by the inferences of the mental states of symbologies, that is to say, it organizes the acquisition of information according to the areas of knowledge that come from the continuous learning process, where it unites the daily thinking with scientific; The learning mechanism underlying cognitive development occurs when a new scientific concept is acquired and related to it by promoting critical, analytical and reflective learning of what is being studied (Gómez, 2017; Suryasa, 2019).

Taking ABP into account with cognitive processes, it is denoted that it starts from a starting point, in the formulation of a project theme, by detecting previous ideas, and then forming a collaborative team, producing a definition of the final challenge, that is to know the problem of the study or phenomenon, establishing learning objectives.

The exchange of ideas flows in the ABP, as well as the analysis and synthesis that allow decision-making to solve a problem. Creativity is a mixture of practice and competence for the development of a final project, reaching significant learning.

IX. EMOTIONAL INTELLIGENCE (IE) AND ABP

Emotional intelligence makes the man the distinction of ability, ability, and intelligence, which is linked to the way to choose the best options for finding solutions taking into account reflection. According to Daniel Goleman's

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book, emotional intelligence is related to social situations that, predicting the study phenomenon, can achieve the expected success through problem resolutions (Goleman, 2012).

For this author, EI is a form of interaction with the world, linking motivation, enthusiasm, perseverance, and empathy developing self-discipline, the neglect of emotional intelligence would cause chronic anxiety leading to health problems, disorders and aggressiveness. Control emotions, face the individual, achieve challenges, increasing social welfare a healthy and emotional coexistence, also motivating research and therefore the realization of projects (Aguaded & Pantoja, 2015).

Emotional intelligence (EI) linked to project-based learning (ABP), is an educational innovation that responds to the needs of society, developing skills that stimulate human thinking, projecting them to improve the quality of life, taking into account the integral personality, cognitive process, knowledge, and emotions that can enhance a project.

An innovative proposal for the development of emotional intelligence is the ABP, this methodological learning strategy comes to raise awareness by educating people to know the problems at a social level and to analyze it critically and reflectively through the possible solutions reaching the objectives proposed.

X. THE ABP AS AN INNOVATIVE PROPOSAL

Project-based learning (ABP), as an innovative proposal in education, in the local education system, is a methodological strategy of interest, which leads the student to raise awareness of aspects related to the social and economic environment through scientific research, field and bibliographic. The ABP occupies a prominent place in the so-called active methodologies, as does the Flipped Classroom (invested class) and cooperative learning, which relates to project-based learning, motivating teachers and students to learn creatively and with skills scientific (Torrego & Méndez, 2018).

The educational institutions to familiarize, the ABP, would train students with active roles that favors academic and work motivation. The projects are previously a scope of success in a society, without restricting any profession, students through this methodology become researchers, innovators, creatives and above all they have to solve any kind of social, economic, educational and labor problems. In order for this methodology to be effective in classrooms, it is necessary to start with previous knowledge of the problems that affect the social level and make them aware of how a solution proposal can be established. Then start distributing ideas that motivate, the participation of the student turning them into significant knowledge, for the beginning a project planning.

According to Fernández (2017), the teacher must be the main engine to create an optimal learning environment, implementing the use of metacognitive strategies, reinforcing group efforts as autonomous, followed by communication, for the proper monitoring of project planning. The metacognitive strategies in the ABP allow a wide dimension of knowledge of the person since it creates possibilities for building knowledge, leading to the maturity of the students. Through projects, thinking skills are developed, allowing understanding, application to each action in current and new situations, analysis to fragment critical thinking, synthesize using critical thinking, finally, evaluate to be analytical in the search of solutions.

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It is emphasized that project-based learning is a fundamental tool, for the development of competencies in which they stand out: work collaboratively, intrinsic and extrinsic motivation, creativity, problem-solving, research skills, and the use of technology, promoting the development of thinking and competition (Ausín *et al.*, 2016).Project-based learning, develop cooperatively and collaboratively, the proposal, which determines a problem in order to meet the needs and customs of those involved, which may be students, teachers, directors, rectors or the community in general (Ayllu Solar, 2017).

ABP is a learning strategy that shows the synergy of praxis, practice, and theory, leading to the student working cooperatively and collaboratively, emphasizing the development of innovative ideas that motivate the student to be a researcher.

In the survey of 34 teachers from 4 educational institutions, it was shown in Figure 4 how teachers familiarize themselves with the knowledge of methodological learning strategies, confirming that the best known is Project-Based Learning.

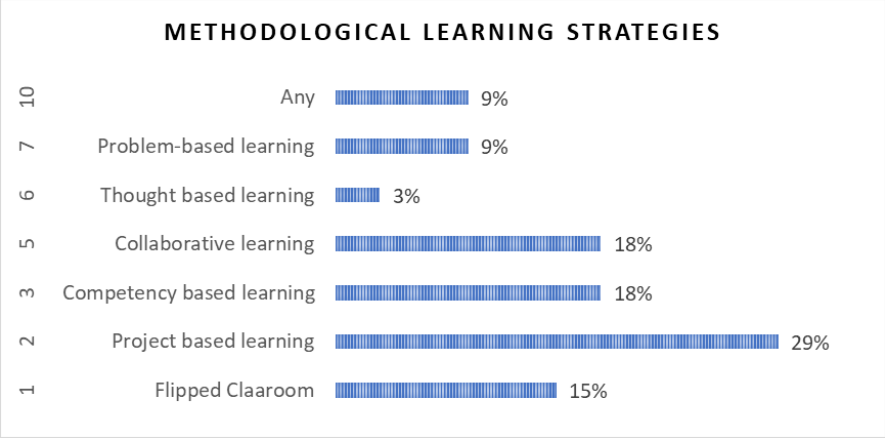

Figure 5: Methodological learning strategies

Source: Teacher Survey

29% of the teachers surveyed, know the strategy methodology Project-Based Learning, however, according to studies not all properly taught in the classroom.In Table 2, 3 necessary data for said research, such as the knowledge that teachers surveyed have on the relationship of methodological strategies with School Projects (PE); In addition to checking the relevance scale, they give to the Student Participation Program (PPE), show whether or not they apply the projects in the classroom.

Table 2: Methodological learning strategies

Relationship of methodological strategy				Ppe rating in education			Application of projects in the classroom		
N	PE -ABP	F	%	Options	F	%	Options	F	%
1	Yes	30	88	Good	21	62	Always	16	47
2	Not	4	12	Regular	11	32	Sometimes	17	50
				Bad	2	6	Never	1	3
	Σ	34	100	Σ	34	100	Σ	34	100

Source: Teacher Survey

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According to the survey of teachers, it is evident that 88% know the origin of school projects as a methodological strategy, which through analysis and interpretation it follows that they work in order to develop skills and abilities for students; As for PPE, 62% consider it good. Therefore, it is found that 50% sometimes apply classroom projects.

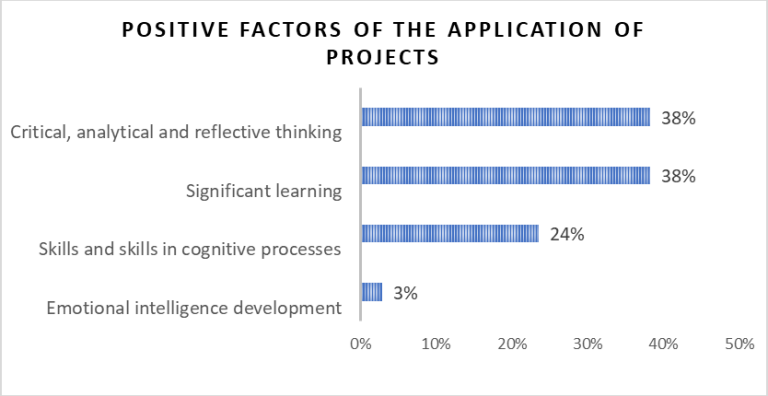

Figure 6: Positive factors of project implementation

Source: Student Surveys

38% of the teachers surveyed said that students acquire critical, analytical thinking and reflection in the development of the project, while significant learning is developed. Table 3 shows the survey of the students, verifying that, in the educational institution, they impart knowledge about group work and projects.

Table 3: Methodological strategies applied in the classroom

Methodological strategies			
N	Applied by the teacher	F	%
1	Projects	49	33
2	Videos (inverted classroom)	10	7
3	Group work / collaborative	82	55
4	Others	4	3
5	None	3	2
	Σ	148	100

Source: Student Surveys

55% of the students stated that they carry out projects, as well as 33% work with projects, through common trunk subjects or through programs of the national education system. In table 4, it is denoted as the student participation program (PPE) and School Projects (PE), they are a fundamental part in the students' cognitive development, valuing the project-based learning pedagogy strategy.

Table 4: Student participation program and school projects

Student participation program			School projects		
PPE	F	%	PE	F	%
Very interesting	104	70	Teamwork	75	51
Uninteresting	35	24	New knowledge	60	41
Nothing interesting	9	6	Others	6	4
			Nothing	7	5
TOTAL	148	100	TOTAL	148	100

Source: Student Surveys

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Through a survey of students, it is known that 70% affirm that the Student Participation program is very interesting, but that they require a specialized teacher to guide them in a timely manner. As for school projects, it is proven that it has served, to work as a team. In table 5, the positive factors that are involved in the realization of a project are denoted, which shows the participation by the achievements of objectives, seeks solutions to a problem raised or fieldwork.

In table 5, it is verified that 27% of the students surveyed mentioned that the factors that influence a project are the objectives, which they hope to follow, given the step to 26% of students prefer to find solutions to the possible subject of study.

Tabla 5: Factores que influyen en un proyecto

Factors that influence in a project			
N	Positive factors	F	%
1	Know the problem of the study phenomenon	42	28
2	Apply surveys	19	13
3	Find solutions to the problem	39	26
4	Achieve the proposed objectives	40	27
5	Other	6	4
6	Nothing	2	1
	TOTAL	148	100%

Source: Student Surveys

The application of methodological strategies motivates students to have a better quality of life and to solve problems according to the events of reality. Figure 7 shows, what benefits the project offers according to the opinion of the students.

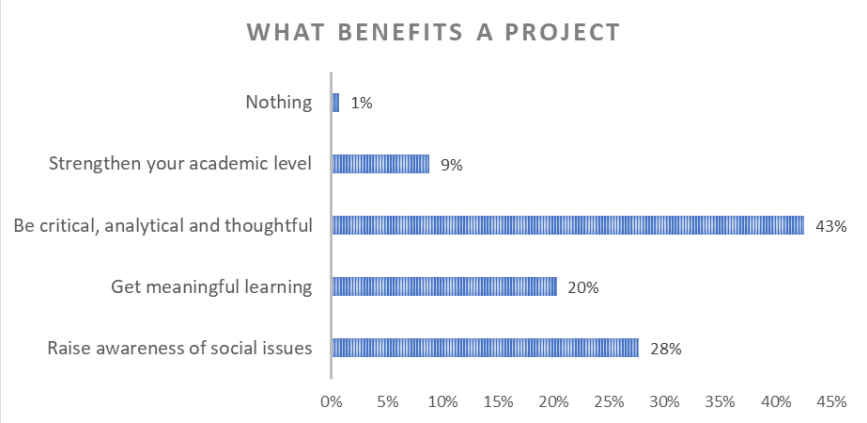

Figure 7: What benefits a Project

Source: Student Surveys

Formally it can be evidenced that 53% of teachers provide students with inputs that help the educational environment through the development of projects that are research and entrepreneurship. Through the study carried out, it has been agreed that project-based learning (ABP) is an innovative proposal, for the local education system, this strategic methodology allows the student to strengthen knowledge, developing skills and abilities, motivating them to have a critical analytical and reflective thinking. It is also verified that the teacher plays a preponderant role

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in systemic thinking, by the way of interacting with didactic tools, leading the student to have an effective and effective educational quality of life within the educational system.

XI. CONCLUSION

It is made reference that 29% of teachers know ABP, while 43% of students allude that through the application of projects they develop critical, analytical and reflective thinking. What is necessary for teachers to have continuous training that allows them to enhance the knowledge of the new methodological learning strategies to be taught to students. It is necessary to link these strategies to the local context, from the global perspective, taking into account that the ABP is an effective learning methodology that emphasizes the development of the cognitive process, based on emotional intelligence with meaningful and creative thinking.

REFERENCES

[1] Aguaded Gómez, MC, & Pantoja Chaves, MJ (2015). Innovate from an emotional intelligence educational project in primary and children. *Educational trends*.

[2] Garcia Centeno, AJ, & Flores Fajardo, JM (2016). *Methodological strategies that facilitate the teaching-learning process of Geography and History of Secondary Education* (Doctoral dissertation, National Autonomous University of Nicaragua, Managua).

[3] Ausín, V., Abella, V., Delgado, V., & Hortigüela, D. (2016). Project-based learning through the tic: An experience of teaching innovation from university classrooms. *University training* , *9* (3), 31-38.

[4] Ayllu Solar. (2017). Aprendizaje Basado en Proyectos: Una propuesta sustentable de energia solar. Chile: Primera Edición. Obtenido de.

[5] Bazurto, J., Muñoz, D., & Loor, G. (2017). Actualización de la metodología enseñanza-aprendizaje en asignatura proyecto Integrador ii de la Facultad de Ciencias Informáticas. Refcale, 5(2), 53-72.

[6] Beltrán-Villamizar, YI, Martínez-Fuentes, YL, & Vargas-Beltrán, Á. S. (2015). The Colombian Educational System on the Road to Inclusion: Progress and Challenges. *Education and educators* , *18* (1), 62-75.

[7] Cobo, G., & Valdivia, S. (2017). Aprendizaje basado en proyectos. Perú: Primera edición Publicación del Instituto de Docencia Universitaria.

[8] Mangui, MCC, Turusina, MAC, & Velarde, DMDFR (2017). Methodological strategies for teaching-learning with a focus on learning in freedom. *INNOVA Research Journal*, *2* (10.1), 54-69.

[9] Didriksson, A. (2017). Educational change in Finland What can the world learn?, from Pasi Sahlberg. *Educational Profiles*, *39* (157).

[10] Enríquez Vargas, SV (2019). *School projects and learning for life in the development of the curriculum of Middle Basic General Education* (Master's thesis, Universidad Andina Simón Bolívar, Ecuador Headquarters).

[11] Fernández-Cabezas, M. (2017). Project-based learning in the university field: an experience of methodological innovation in education. *International Journal of Developmental and Educational Psychology*, *2* (1), 269-278.

[12] Goleman, D. (2012). Inteligencia emocional. Colección Ensayo Editorial Kairós.

[13] Gómez Martínez, L. (2017). Cognitive development and formal education: Analysis based on the proposal of LS Vygotsky. *Universitas Philosophica*, *34* (69), 53-75.

[14] López, MML (2019). Critical pedagogy as an innovative proposal for meaningful learning in basic education. *ReHuSo: Journal of Humanistic and Social Sciences* , *4* (1), 87-98.

[15] López, N. (2017). Project-based learning (ABP) applied in integral management of river basins. Case study in Forest Engineering. *Forests Latitude Zero*, *7* (2).

[16] Marista. (2019). Modelo Educativo. Obtenido de https://maristas.org.mx/modeloeducativo/

[17] Ministerio de Educación. (2017). Ecuador mejoró su sistema educativo en los últimos 7 años.

[18] Ministerio de Educación. (2019). Estructura del PE. https://educacion.gob.ec/estructura-de-pe

[19] Ministerio de Educación. (2019). Guia metodológica para docentes facilitadores del Programa de Participación Estudiantil (PPE). Quito: Tercera Edición.

[20] Ministerio de Educación. (2019). Metodología del PPE. https://educacion.gob.ec/metodologia-del-ppe

DOI: 10.37200/IJPR/V24I1/PR200267
Received: 22 Nov 2019 | Revised: 26 Dec 2019 | Accepted: 10 Jan 2020

[21] Moreira, P. (2019). Las Tics en el aprendizaje significativo y su rol en el desarrollo cognitivo de los adolescentes. ReHuSo: Revista de Ciencias Humanísticas y Sociales,, 4(2), 1-12.
[22] Mosquera, I. (21 de septiembre de 2017). Japón: un estudio de su sistema educativo. *Unir Revista*.
[23] Panjón Nieves, P. S., & Tigre Zhizhpón, L. A. (2017). *Principales métodos activos para la enseñanza de Ciencias Naturales en sexto de educación general básica* (Bachelor's thesis).
[24] Stanley, MG (2016). The keys to the success of Finland's education system. de Redacción, C. (2018). An approach to project-based learning, one hundred years after "The Project Method", by WH Kilpatrick. *Interuniversity Electronic Teacher Training Magazine*, *21* (2).
[25] García-Varcálcel Muñoz-Repiso, A., & Basilotta Gómez-Pablos, V. (2017). Project Based Learning (ABP): evaluation from the perspective of Primary Education students.
[26] Vidal, M., Salas, R., Fernández, O., & García, A. (2016). Educación basada en competencias. *Scielo*, 30(1), 1516-2902.
[27] Akpomedaye, E. (2019). Assessment of information and communication technology application in the teaching of office technology and management students in delta state polytechnics. *International Journal of Social Sciences and Humanities*, *3*(3), 18-27.
[28] Arini, N. M., Yadnyawati, I. A. G., & Paramartha, W. (2019). Swadharma grihastha asrama on educating children toward Hindu families. *International Journal of Social Sciences and Humanities*, *3*(3), 10-17.
[29] Borris, D., & Zecho, C. (2018). The linguistic politeness having seen on the current study issue. *Linguistics and Culture Review*, *2*(1), 32-44.
[30] Dewi, N. P. R. A., & Ramantha, I. W. (2019). Effect of conflict and unclear role on auditor performance with emotional quotient as moderating variable. *International Journal of Social Sciences and Humanities*, *3*(3), 50-59.
[31] Indriana, R. D. (2019). Distribution of subsurface anomalies in the Muria Peninsula and depth analysis with euler deconvolution. *International Journal of Physical Sciences and Engineering*, *3*(3), 21-30.
[32] Kusumayanti, G. D., & Dewantari, N. M. (2017). The influence of low purine diet and physical activity on changing of uric acid levels in hyperuricemia. *International Journal of Health Sciences*, *1*(3), 1-9.
[33] Li, Z. X., & Huan, C. Y. (2019). Chinese and North American culture: A new perspective in linguistics studies. *Linguistics and Culture Review*, *3*(1), 14-31.
[34] Mantra, I. B. N., Astawa, I. N., & Handayani, N. D. (2019). Usability of innovative learning models in higher education. *International Journal of Social Sciences*, *2*(1), 38-43.
[35] Mantra, I. B. N., Suparsa, I. N., & Widnyana, I. W. (2019). Intensive collaborative learning workshop to enhance private teachers' teaching competence. *International Journal of Social Sciences*, *1*(1), 47-51.
[36] Mendoza, A. V. P., Viteri, C. G. V., & Menendez, E. A. M. (2019). Analysis of working conditions to which the triaduct is subjected in Roca Fuerte route - Manta. *International Journal of Physical Sciences and Engineering*, *3*(3), 7-20.
[37] Novayanti, N. P. Y., Mahalini, D. S., & Suwarba, I. G. N. M. (2018). Recurrence related factors of febrile seizure. *International Journal of Health Sciences*, *2*(2), 37-45.
[38] Partha, I. M. B., Widanaputra, A. A. G. P., Ratnadi, N. M. D., & Mimba, N. P. S. H. (2019). Effect of audit committee characteristics on relationship between financial distress and income maximization actions. *International Journal of Social Sciences and Humanities*, *3*(3), 28-35.
[39] Ratnawati, I. G. A. A., Suandayani, N. K. T., & Sutapa, G. N. (2019). The linearity of x-ray devices radiation output and its relationship with patient thickness. *International Journal of Physical Sciences and Engineering*, *3*(3), 1-6.
[40] Rohani, -. (2019). Values-based social studies learning the Malay culture in secondary schools in developing social studies skills of learners. *International Journal of Social Sciences*, *2*(1), 4-18.
[41] Rusmini, -, Dramawan, A., & Cembun, -. (2018). The influence of supportive psychotherapy toward patient anxiety to pre-hyperbaric therapy. *International Journal of Health Sciences*, *2*(3), 55-64.
[42] Sulaeman, R., Muhasidah, -, Purnamawati, D., Zulkifli, -, Jafar, S., & Suiraoka, I. (2018). Progressive muscle relaxation using video aids reduces blood pressure of hypertension patients. *International Journal of Health Sciences*, *2*(3), 33-42.
[43] Suryasa, W. (2019). Historical Religion Dynamics: Phenomenon in Bali Island. *Journal of Advanced Research in Dynamical and Control Systems*, *11*(6), 1679-1685.

DOI: 10.37200/IJPR/V24I1/PR200267
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