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DESIGNING THE CLASSIC TEACHING SESSION FOR ARCHITECTURAL STUDENT VIA NEW BOPPPS MODEL WITH THE SPIRIT “S” OR SEVENTH SEAL

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ABSTRACT

Purpose is to analyze BOPPPS as a model for participatory learning and development (PLD) activities for architectural students.

Methodology. The methods of analysis, classification, and descriptions are used.

Results. BOPPPS model consists of the following components: Bridge-in: An opening session to introduce the topic, participants, and objectives of the PLD activity. Objectives: Defining the specific goals and outcomes that the PLD activity aims to achieve. Post-test: An evaluation tool used to assess participants' knowledge and understanding of the topic prior to the PLD activity. Participatory Learning: A process where participants actively engage in learning activities, such as group discussions, role-plays, and hands-on exercises, to acquire new knowledge and skills. Post-assessment: An evaluation tool used to assess participants' knowledge and understanding of

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the topic after the PLD activity. Summary: A closing session where the facilitator summarizes the key takeaways from the PLD activity and highlights areas for further improvement or follow-up. The BOPPPS model is designed to ensure that PLD activities are well-structured, participatory, and effective in promoting learning and development. By incorporating evaluation tools such as pre- and post-tests, the model allows organizers to measure the impact of the PLD activity and assess its effectiveness. The addition of the "S for Spirit" in the BOPPPS model emphasizes the importance of designing PLD activities with the spirit, or the essence and guiding principle, of the project. This means that the PLD activity is not only structured and evaluated effectively, but also aligns with the purpose, values, and vision of the project. Designing with the spirit can add a more meaningful and personal touch to the PLD activity, creating a more impactful learning experience for participants.

Conclusions. The updated BOPPPS model could include one more component Spirit (S). They are as followings: Bridge-in, Objectives, Post-test, Participatory Learning, Post-assessment, Summary, and definitely Spirit (S) – the guiding principle and essence of the project that shapes the PLD activity.

KEYWORDS: BOPPPS, Spirit, Learning, PLD, Understanding.

INTRODUCTION

The BOPPPS model is an efficient template for the planning of lectures. Insightful instructors, however, have used the various stages in this template intuitively without ever being aware of its existence (Ma et al., 2021). After having learnt the BOPPPS model formally, we realized that we had been using elements of the model unconsciously in an intuitive manner in the teaching of Architectural Design and Documentary Film Production at KDU.

BOPPPS is an acronym for **B**ridge-in, **O**bjectives, **P**ost-test, **P**articipatory Learning, **P**ost-assessment and **S**ummary, a systematic and processual approach to teaching which provides comprehensive coverage for all the salient features of a lecture, paving the way for excellence in teaching (Liu et al., 2022). For the inexperienced instructor who has just begun his career in teaching, and for whom standing in front of a class full of intensely focused students would be a terrifying prospect, it is a godsend since it virtually provides an all-inclusive template that could be used in most classroom settings and situations (Wang et al., 2021).

Lectures should be meticulously planned since it is not only information that is disseminated by the lecturer. Apart from the basic content of the lecture, experienced teachers also demonstrate how subject matter is conveyed to students. Whilst learning from inspired teachers, students also learn how to teach (Shih, & Tsai, 2020). Great teachers consciously impart this valuable lesson to students and, in so doing, groom the next generation of teachers. The baton should be passed on to posterity in class, long before any student has decided that teaching is a viable career path for him (Yang et al., 2019).

The BOPPPS model is a double-edged sword, so to speak, a truly effective way of accomplishing the twofold meta-objectives of teaching and grooming students for

careers in teaching (Wu et al., 2021). The various stages of the BOPPPS model will be taken up next for analyses. The purpose of education using the BOPPPS approach can be summarized as follows: Bridging knowledge gaps, Optimizing learning experiences, Promoting critical thinking skills, Preparing for future success, and Supporting personal growth and development. So, the article **purpose** is to analyze BOPPPS as a model for participatory learning and development (PLD) activities for architectural students.

METHODOLOGY

The methods of analyses, classification, descriptions are used.

THEORETICAL BACKGROUND

Table 1

Lesson Plan for Delivery of Micro-Lecture

COURSE: Theory of Architecture	DATE: 12 th June 2022
TITLE: Interactive War Memorial: A Soldier's Journey into Deathlessness	INSTRUCTOR: Archt SR Gunerathne
BRIDGE: Delineates the architectural design process. War memorial without sculptures of soldiers, Design commissioned by Field Marshall Sarath Fonseka to commemorate victory in the "War Against Terror"	
LEARNING OBJECTIVE: How to use words creatively to envision existential space, how to differentiate between words, spatial words, metaphors and archetypes: how to use existing precedents to create innovative spaces for specific functions.	
PRE-ASSESSMENT: Design exercises conducted prior to lecture establish understanding of the design process	MATERIAL: Multimedia projector

PARTICIPATORY LEARNING

Illustrates how theoretical knowledge is employed to create visible and practical design solutions for the real world, /design process comprises the 4 learning styles of the Kolb Learning Cycle comprising Concrete Experience, Reflective observation, Abstract conceptualization, and Active experimentation

TIME	INSTRUCTOR ACTIVITIES	LEARNER ACTIVITIES	RESOURCES
Coconceptualization – 2min	Use of Rhetoric		
Programme – 2 min	Use of Precedents		
Precedents – 2 min	Use of Connotative words,	Relating the	PowerPoint,
Design Philosophy – 3 min	metaphors, archetypes	presentation to the	Sketchup
Design concept – 3 min	and Philosophy/theory to	given Studio Designs	
War memorial – 8 min	generate a design		

POST ASSESSMENT: Setting of design exercises to ascertain whether the design process from conceptualization to design has been understood

SUMMARY: establishes the process whereby concepts, precedents, brief and design philosophy are used to generate design, use of spatial words, metaphors and archetypes in designing spaces for human habitations and functions

WHAT WORKED WELL/WHAT NEEDS REVISION: Working consistently with a viable concept in order to flesh out a design scheme poses difficulties for students

B: The Bridge-in

The bridge is what enables the lecturer to arouse interest in the students in regard to the lecture that is about to be delivered. Often times, it could be in the form of a humorous anecdote, a song, a video clip or a powerful image or series of images that strike an introductory note for the lecture that is about to be presented (Li et al., 2021).

The bridge could refer to a contemporary societal trend, fashion, or interesting trivia that students are familiar with. This facilitates the smooth transmission of information and also functions as a learning aid or mnemonic. Students learn not only in a linear fashion but also through associations. A web of associations for the bridge-in would result in that particular lecture becoming an unforgettable experience for the students. As usual practice is to use imagery and footage from advertisements along with short films thrown in for good measure (Table 1).

O: Objectives

The intended learning outcomes (ILO) are covered under Objectives. This deals with the content of the lecture that is processed by the students so that it may be applicable in some other context or setting. In the field of architecture, ILOs have practical and theoretical ramifications (Cui, 2019).

More often than not, they lead to practical applications of the knowledge that is gathered from a lecture. An ILO could also provide inspiration for a student to conduct research in an area touched upon in the lecture. Generally, the most important ILO in the discipline of architecture is the application of the knowledge gained by the student in a design exercise to engender existential space.

P: Pre-assessment

The first "P" in the BOPPPS acronym deals with the lead up to a lecture that has been planned. In this regard, the insights gained from teaching an architectural design studio regarding how students approach their design exercises, makes the lecturer prescient in his pre-assessment of a student's learning approach (Zhang, 2020). Prior experience in the design studio also enables him to pitch his lecture to the class, so that an entire group of students with wide ranging learning capacities would be able to comprehend him. Pre-assessment also allows the lecturer to pick and choose students who are opinion leaders to precipitate discussions in class.

P: Participatory Learning

Participatory learning constitutes the main segment in the learning process. I teach documentary film production and architectural design to undergraduates of the 5-year BArch program in architecture at the General Sir John Kotelawala Defence University. In my experience as a teacher in documentary film production, participatory learning is varied, interesting and rewarding. In fact, this form of learning is a sine qua non in the teaching of a film studio.

Students first learn the rudiments of how meaning is conveyed in still images after which they are introduced to moving images and how they convey meaning (Wang, 2021). Provocative stills and videos of world advertisements are used to generate discussions and conduct analyses. Insightful responses are rewarded with prizes.

P: Post-assessment

The final “P” in the BOPPPS acronym, post-assessment is a means of ascertaining the extent to which a lesson has percolated into the sensibilities of the student (Chen et al., 2022). During this penultimate stage, the lecturer could encounter un envisaged scenarios, where students’ use of knowledge imparted in class is applied in contexts that are seemingly disconnected from the use it was originally intended for.

In the lecture series on film production and theory of architecture which is conducted, post assessment leads to creative design both as filmic and spatial responses to given assignments. Thus, students’ understanding of what they learnt in class under Documentary Film Production is tested through group assignments such as the compilation of photograph portfolios, storyboarding short stories, writing pitches, and developing them into treatments. The end product in these series of assignments is the production of a video documentary short film, a comprehensive and exhaustive exercise that incorporates all the tasks that define post assessment.

S: Summary

In BArch lectures, Summary is achieved through critiques of students’ work by visiting architects, filmmakers and theorists in the field. Some students go on to exhibit their work in international competitions and use their talents in other disciplines in order to conduct filmic simulations of various settings for research purposes (Li, 2019).

RESULTS**New addition of S for Spirit: Adding the Final “S” to BOPPPS**

As a teacher, one of the most important lessons that a teacher aims to teach lies outside the curriculum and, hence, does not get included in the traditional format of the lesson plan. It is to demonstrate that education is for life and not for a living. This statement is attributed to Bhagavan Sri Sathya Sai Baba, one of the most beloved religious teachers of the 20th century and an inspired educationist, who passed away in 2011. Bhagavan Baba had realized that an education without any ethical foundation results in the hardening of the human soul and leads to a pervasive lovelessness in society. He has repeatedly endeavored to communicate the vital truth that individuals should be humane and of service to the human commune, over and above the dictates of the career path that he has chosen for himself.

This, he believes, is what engenders a society governed by individuals who are guided by the Spirit without any religious bigotry. In our modern era where the word “love” has become a four-letter expletive, Baba demonstrates that love should be the root cause, the basis of any civilized endeavor. The four axioms given below convey the force of his teachings and his insight with regard to the need for ethics in education, in a concise and poetic manner.

- | | |
|----------------------------|---------------|
| – Love as thought is | Truth |
| – Love as action is | Right conduct |
| – Love as feeling is | Peace |
| – Love as understanding is | Non-violence |

In our opinion, this aspect should be incorporated in the BOPPPS lesson plan as the final “S”, or the seventh seal, in the former 6-letter acronym to reflect the spiritual dimension that it lacks at present. It most emphatically should not be part of the Bridge-in component as this would leave its inclusion to chance and the whim of the lecturer. The new reading that this study propose would incorporate 7 letters as in this example, “**BOPPPS**”, where the last “S” is highlighted in red to denote the Spirit with the toned-down former version of the acronym preceding it.

The Seventh Seal: Designing with the Spirit

This section will now demonstrate how we incorporated this final spiritual dimension in my seven-letter modified version of the **BOPPPS** in the teaching of architectural design.

Teaching of BArch students’ curriculum was designed had recourse to the Blooms Taxonomy in the teaching of architectural design, it showed how it negotiated the students’ access to the Affective Domain in Blooms through the use of specially designed assignments in the form of two color assignments. In reality, they functioned as psychological probes, enabling students to get in touch with childhood phobias and negative emotions generated by long forgotten traumatic experiences, providing them with the opportunity to understand and, thereby, free their minds of such debilitating psychological blocks. It also demonstrated how this newfound freedom impacts positively on the Cognitive Domain where students grapple with potent words and metaphors to derive appropriate and meaningful concepts that facilitate the engendering of existential space.

Furthermore, in this section we will show how the Spirit “S” or Seventh Seal is incorporated in a lesson plan that deals with the design of an interactive war memorial. This in fact becomes the content for the Psychomotor Domain in Blooms Taxonomy. Students could use this segment as template to conduct their design explorations.

A BOPPPS CASE STUDY: DESIGNING THE INTERACTIVE WAR MEMORIAL

The above lecture was delivered after effectively demonstrating to the students, the manner in which the Cognitive Domain in the Blooms Taxonomy is dependent on the realization of the desiderata in the Affective Domain. The lecture was based on a commission we had received to design a war memorial for the Vijayabha Infantry Regiment’s Regimental Centre located at the Boyagane Camp in Kurunegala, soon after Sri Lanka’s War Against Terror ended in May 2019. The project was designed and Archt SR Gunerathne author re-enacted the design process as a learning experience for the students using my reinterpretation of the BOPPPS lesson plan.

Bridge-in: the Telltale Hook

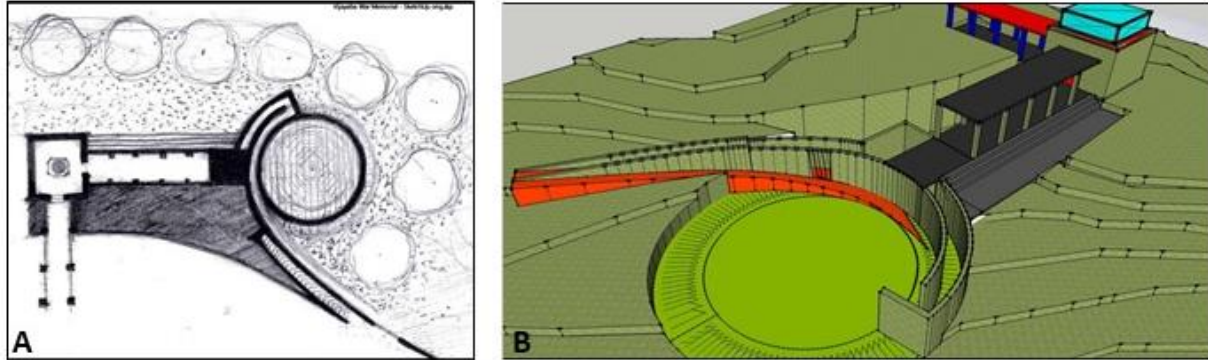
The very nature of the commission, the circumstances of which are delineated below, constitutes the Bridge-in component of the lesson plan.

My former schoolmate, Maj. General Rajitha De Silva, who at that point in time happened to be the aide de camp to Field Marshall Sarath Fonseka, contacted me to commission a war memorial for the aforementioned regiment in Kurunegala. Having known me for over 40 years as a maverick in whatever I did, he had an intuitive feel for the way I would approach an architectural design. He communicated his design brief via telephone. It

had the enigmatic simplicity and contradiction of a Japanese Koan: “Design me a war memorial without incorporating statues of embattled soldiers in battle fatigues.” It was an architect’s dream come true. Evidently, my friend knew me well!

Figure 1

Diagram of the war memorial; A-Sketch; B- Graphical representative



Objectives: Learning How Architects Conceptualise Buildings

It was realized almost immediately that he was referring to an interactive space where space itself would function as the object. In order to achieve this end author had to envision spaces that possessed distinctive moods, which could be generated with the use of specific materials (Figure 1 A and B). Such spaces are archetypal, and I mean it in the Jungian sense. A brief introduction to Jung’s psychology should suffice at this juncture. Psychologist Carl Jung postulated the existence of a substratum in our unconscious, with unrealized potential, which he referred to as the Collective Unconscious (Jung, 2016).

“Collective”, since he had realized through his research that its structures are common to the entire human race. He referred to these common structures of our Collective Unconscious as Archetypes. Jung believed that these structures were psychic imprints of a bygone aeon when the nascent human race was impressionable, and the environment was threatening and full of inexplicable phenomena that filled him with fear and wonderment. Thus, the natural objects that powered his world were invested with mana and were considered divine.

We had to use such motifs in my design and my inspiration was derived from primeval archetypes such as the sun, moon, stars, sky, night, day, fire, water, mountains, trees, shamans and, especially because of the specific nature of my commission, the warrior. Thus, my brief or program was constituted of the following.

1. Spaces without sculptures of embattled soldiers;
2. Spaces as objects;
3. Interactive spaces with emphasis on materiality;
4. Spaces with emotive power;
5. Spaces with archetypal resonance.

These programmatic requirements had to be realized through my conceptualisation of the war memorial, which progressed from words through spatial words and spatial

metaphors to archetypes as follows. Words – Spatial Words – Spatial Metaphors – Archetypes

Thus, the ILOs or objectives of this lecture were the empowerment of students by enabling them to conceptualise design spaces through the mediatory function of words, spatial words, spatial metaphors and archetypes with which they have been familiarized in previous lectures.

Pre-assessment: Exemplifying Conceptual Categories

During this stage in the lesson, students were asked to provide examples for the four conceptual categories named in the foregoing section on Objectives or ILOs. Thus, they had to confirm with each other in class as part of a group exercise, in order to provide examples that best define a war memorial. The students came up with innovative answers, frequently without any prompting on my part. They were asked to suggest words that could define a soldier/warrior, spatial words that could prompt a design concept, spatial metaphors that could generate a design scheme and archetypes that could give form and emotive power to a design. Their contributions helped complete the conceptual sequences as follows.

1. Words – Virtue, Fearlessness, Deathlessness, Emancipation;
2. Spatial Words – Path, Sanctuary, Waters, Sky, Solitude;
3. Spatial Metaphors – One thing in terms of another: Building as a Journey;
4. Archetypes – Sky, Light, Water, Path, Journey, Sanctuary, Warrior.

The students, having gained confidence with their successful interactions were now primed to absorb, in my opinion, the most significant section of the lecture. Therefore, chose to combine the Participatory Learning process with the Spirit segment, which is the final “**S**” in this reinterpretation of the **BOPPPSS** Model.

Participatory Learning and the Spiritual Dimension

We drew on the Tripitaka and Upanishads, the Buddhist and Hindu scriptures that author Guneratne is familiar with, to define this section. The discipline that is required to live the life of a monk is compared to the discipline of a warrior in many cultures of the world. In actual fact, this distinction begins to disappear in the Zen Culture of mediaeval Japan where warriors ordained as monks and monks gave up their robes to become warriors. This is a tradition that is part of Sri Lanka’s heritage as well as exemplified in the lives of 3rd century BCE warriors such Phussadeva and Theraputthabhaya.

The spaces of the war memorial would be sculpted with the idealized virtues of the warrior monk and the spatial concretization of the various stages of his spiritual journey towards self-realization, two apt metaphors indeed for this building typology. I, therefore, had to define the character of this especial warrior through the religious ideals and philosophies that prevail in our part of the world, i.e., the Subcontinent, in order to firmly entrench the building in our culture and contextualise it.

In order to achieve this end author had recourse to the ten Paramis as defined in the Buddhist scriptures namely Generosity (Dana), Virtue (Sila), Renunciation (Nekkhamma), Wisdom (Pañña), Energy (Viriya), Patience (Khanti), Truthfulness (Sacca), Determination (Aditthana), Lovingkindness (Metta) and Equanimity (Upekkha).

For the purpose of representing the war memorial in terms of a spiritual journey undertaken by the warrior we used two concepts from the Upanishads. From the Isa Upanishad came the following enigmatic verse: “Into blind darkness enter they that worship ignorance; into darkness greater than that, as it were, they that delight in knowledge.” From the Brihadaranyaka Upanishad the compelling notion of a spiritual evolution that carries the individual from a state untruth toward truth, from darkness toward light and from mortality to deathlessness. The convergence of these concepts facilitates the spatial envisioning of the war memorial. Thus, the war memorial could now be defined as a warrior’s journey through a series of elements or world spaces symbolic of the foregoing spiritual attributes.

1. Path of the Fearless – the soldier’s descent into the Great Unknown;
2. Sanctuary of Solitude – the soldier is alone before the Great Unknown;
3. Sanctuary of Sublime Virtue – the soldier enters and engages the Great Unknown;
4. Sanctuary of Deathless Waters – the soldier emerges from the Great Unknown, sanctified;
5. Sanctuary of Light – the soldier emanates light, the sign of his purification;
6. Sanctuary of Emancipation – the soldier is beyond the need for any kind of protection.

This segment of the lecture lays emphasis on the notion of “Education is for life and not for a living”, as explicated by Bhagavan Baba. By this time the student has begun to see with great clarity the viability of a design process that harnesses word concepts to envision and give form to a spatial end product that enriches our built environment.

Post-assessment: Student Responsivity in the Design Studio

In the teaching of architectural design, post-assessment is a long and arduous process. The lecturer needs to be patient. It is invariably a way of ascertaining how successfully a student applies the theoretical principles learnt in class in his design work over the course of the semester, or perhaps the entire year as the case may be. A student’s performance improves in unforeseen ways as attested to by the student’s year coordinator. Results become manifest in the design schemes of students where they resolve contradictory forces and ideas harmoniously.

The Creative Summary: Design Critiques

During the course of the lesson, we generally summarise the content by showing how they are seamlessly connected to ideas explicated in previous lectures. However, it is the studio critique that constitutes the true summary of the theory learnt in class and applied in the design studio.

DISCUSSION

In this study, the BOPPPS’S’ model with seven-phase framework was adapted to organize and accelerate the teaching cycle including goal, behavior, learning activity, and evaluation. Furthermore, the model could be helpful for students’ multiple learning skills, particularly self-directed learning, concentrated learning, and learning retention. However, this study has some limitations, and it was done only for the architectural students and better check with the other streams also (Babak, 2023; Holubnycha et al., 2023).

CONCLUSION

BOPPPS stands for Bridge-in, Objectives, Post-test, Participatory Learning, Post-assessment, and Summary, which is a model used in education to design and implement participatory learning activities. It is based on the following components: Bridge-in: This is a pre-test or an introduction to the topic that provides a baseline understanding of the students' current knowledge and helps them connect the topic to their prior experiences. Objectives: This refers to the specific goals and outcomes that the participatory learning activity aims to achieve. Post-test: This is a test that is administered after the participatory learning activity to measure the students' understanding of the topic. Participatory Learning: This is the main component of the BOPPPS model and refers to the interactive and engaging activities that are designed to facilitate learning and understanding. Post-assessment: This is an evaluation of the students' understanding of the topic after the participatory learning activity, typically in the form of a written assignment or a presentation. Summary: This is a review of the learning that took place during the participatory learning activity, which provides closure and helps reinforce the key concepts. The Seventh Seal: Designing with the Spirit.

Designing with the spirit refers to a creative approach to design that is guided by a particular purpose, concept, or ethos. It involves creating designs that embody a particular vision or set of values, rather than simply following a set of aesthetic or technical guidelines. The "spirit" in this context can refer to the essence of the design project, the values and beliefs of the designer, or the desired atmosphere or impact that the design is intended to create. Designing with the spirit involves a level of intuition, creativity, and subjective interpretation, and is often seen as a more organic and holistic approach to design.

CONFLICT OF INTERESTS

The authors declare that there are no conflicts of interest regarding the publication of this paper.

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АНОТАЦІЯ / ABSTRACT [in Ukrainian]:

ПРОЕКТУВАННЯ КЛАСИЧНОГО НАВЧАННЯ ДЛЯ СТУДЕНТІВ-АРХІТЕКТОРІВ ЗА ДОПОМОГОЮ НОВОЇ МОДЕЛІ «BOPPPS» З УРАХУВАННЯМ ДУХУ ПРОЕКТУ

Мета полягає в аналізі BOPPPS як моделі Спільного Навчання та Розвитку (СНР) для студентів-архітекторів.

Методологія. Використано методи аналізу, класифікації, опису.

Результати. Модель BOPPPS складається з наступних компонентів. Вступ: вступ для ознайомлення з темою, учасниками та цілями діяльності СНР. Цілі: Визначення конкретних цілей і результатів, на досягнення яких спрямована діяльність СНР. Діагностичний тест: інструмент оцінювання, який використовується для оцінки знань і розуміння учасниками теми до початку СНР. Навчання за участю: процес, у якому учасники активно беруть участь у навчальній діяльності, такій як групові дискусії, рольові ігри та практичні заняття, щоб отримати нові знання та навички. Пост-оцінка: інструмент оцінювання, який використовується для оцінки знань і розуміння теми учасниками після діяльності СНР. Підсумок: заключна зустріч, на якій фасилітатор підсумовує ключові висновки з діяльності СНР і висвітлює галузі для подальшого вдосконалення або подальших дій. Модель BOPPPS розроблена для забезпечення того, щоб діяльність СНР була добре структурованою, залученою та ефективною. Включаючи інструменти оцінки, такі як попередні та підсумкові тести, модель дозволяє організаторам вимірювати вплив діяльності СНР та оцінювати її ефективність. Додавання останнього компоненту «S» у моделі BOPPPS підкреслює важливість проектування діяльності СНР з урахуванням духу, суті та керівного принципу проекту. Це означає, що діяльність СНР не тільки структурована та ефективно оцінена, але й узгоджується з метою, цінностями та духом, баченням проекту. Проектування з урахуванням духу проекту може додати більш значущого та індивідуального відтінку діяльності СНР, створюючи більш впливовий досвід навчання для учасників.

Висновки. Оновлена модель BOPPPS може містити ще один компонент «S» – це дух проекту на додачу вже відомих. Вони такі: Вступ, Цілі, Діагностичний тест, Навчання за участю, Пост-оцінка, Підсумок та, безумовно, Дух проекту – керівний принцип і суть проекту, який формує діяльність СНР.

КЛЮЧОВІ СЛОВА: модель BOPPPS, Дух проекту, Навчання, Спільне Навчання та Розвиток, Розуміння

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