

ASSESSING THE IMPACT OF PROJECT-BASED LEARNING ON PROMOTING SUSTAINABLE DEVELOPMENT AWARENESS AT THE UNIVERSITY OF DANANG - UNIVERSITY OF FOREIGN LANGUAGE STUDIES

ĐÁNH GIÁ TÁC ĐỘNG CỦA MÔ HÌNH HỌC TẬP DỰ ÁN TRONG VIỆC THÚC ĐẨY NHẬN THỨC VỀ PHÁT TRIỂN BỀN VỮNG TẠI TRƯỜNG ĐẠI HỌC NGOẠI NGỮ - ĐẠI HỌC ĐÀ NẴNG

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Abstract - Sustainable development has become a global trend and a key orientation in Vietnam's development strategy. To advance this agenda, the United Nations introduced the 17 Sustainable Development Goals (SDGs), highlighting the role of young people, especially university students. This study adopts a quasi-experimental design combining quantitative and qualitative methods to examine the impact of the "Youth For Change" project on students' knowledge, attitudes, and practices (KAP) regarding the SDGs at the University of Danang - University of Foreign Language Studies. Data were collected through pre- and post-surveys with 77 students who completed both rounds and semi-structured interviews with 16 students from different faculties. The results show that after participating in the project, students' knowledge of the SDGs increased significantly, their attitudes became more positive, and their sustainable practices improved considerably. The study also suggests measures to strengthen sustainable development education in higher education contexts.

Key words - Sustainable development; SDGs; knowledge; attitude; practice

Tóm tắt - Phát triển bền vững là xu hướng toàn cầu và là định hướng quan trọng trong chiến lược phát triển của Việt Nam. Để thúc đẩy mục tiêu này, Liên Hợp Quốc đã ban hành 17 Mục tiêu Phát triển Bền vững (SDGs), nhấn mạnh vai trò của thế hệ trẻ. Nghiên cứu này sử dụng phương pháp bán thực nghiệm kết hợp định lượng và định tính nhằm đánh giá tác động của dự án truyền thông "Youth For Change" đến kiến thức, thái độ và hành vi (KAP) về SDGs của sinh viên Trường Đại học Ngoại ngữ - Đại học Đà Nẵng. Dữ liệu được thu thập thông qua khảo sát trước - sau với 77 sinh viên tham gia đủ hai lần và phỏng vấn bán cấu trúc với 16 sinh viên từ nhiều khoa khác nhau. Kết quả cho thấy sau dự án, mức độ hiểu biết về SDGs tăng rõ rệt, thái độ tích cực hơn và các hành vi sống bền vững được cải thiện đáng kể. Nghiên cứu cũng đề xuất một số giải pháp nhằm nâng cao hiệu quả giáo dục phát triển bền vững trong môi trường đại học.

Từ khóa - Phát triển bền vững; SDGs; kiến thức; thái độ; thực hành

1. Introduction

In 2015, the United Nations (UN) adopted the 2030 Agenda for Sustainable Development, which comprises 17 Sustainable Development Goals (SDGs) [1]. The SDGs aim to end poverty; improve health, reduce social inequalities, and enhance the quality of education; while also promoting economic growth in association with sustainable environmental protection on a global scale. In this process, UNESCO identifies education as a core factor in realizing the SDGs. The 2030 Agenda for Sustainable Development refers to education as one of the SDGs, specifically SDG 4 - Quality Education, and emphasizes that education is the key to achieving the remaining 16 goals [2].

In this context, university students play a particularly important role, as they are both the central subjects of education and key agents in promoting sustainable development through their actions and decisions [3]. Therefore, higher education needs to integrate the SDGs into educational activities, ranging from curricular to extracurricular activities [4], while also focusing on equipping students with essential skills for implementing the SDGs, such

as strategic vision, design thinking, and problem-solving competence [5]. This integration will provide future professionals with the knowledge, tools, and skills necessary to effectively address complex challenges in the future.

Although the importance of the SDGs has been affirmed, access to these goals at the University of Danang - University of Foreign Language Studies (UD-UFLS), has remained largely theoretical, with a lack of practical intervention activities. Therefore, this study aims to assess the impact of educational communication products on the SDGs among UD-UFLS students through a project-based learning model.

2. Literature review and theoretical framework

2.1. Literature review

Research on university students' knowledge, attitudes, and practices regarding the 17 SDGs in higher education institutions in Vietnam remains relatively limited. A study conducted at The University of Education, Hue University, and The University of Danang, University of Science and Education, showed that although students had relatively good awareness of sustainable development, the

application of this understanding to their studies and daily life was still not clearly evident [6].

Internationally, many studies at universities have reported similar findings. In Malaysia, surveyed students demonstrated good understanding and positive attitudes toward the 17 SDGs; however, their practice of these goals was not commensurate with their level of awareness [7]. Similarly, a study in Spain also indicated a significant gap between awareness and action among students, as knowledge and positive attitudes had not yet been translated into practical behaviors [8]. Most current studies focus only on examining the current situation or curricular integration, while relatively few experimental studies have assessed the effectiveness of communication projects implemented by students themselves.

To enhance students' knowledge, attitudes, and practices regarding the 17 SDGs, various initiatives have been implemented at universities both in Vietnam and abroad. In Vietnam, initiatives such as integrating the SDGs into training programs at the University of Economics Ho Chi Minh City and green living campaigns at Vietnam National University have initially generated positive changes in the university environment [9, 10]. Meanwhile, Korea University has developed a green dormitory and an ecological campus to reduce carbon emissions and promote environmentally friendly behaviors [11].

2.2. Theoretical framework

The SDGs consist of 17 global goals designed to address economic, social, and environmental challenges by 2030 [1]. In the university context, education on the SDGs not only provides knowledge, particularly in relation to SDG 4, but also serves as a tool for shaping sustainable values and behavioral orientations among students [2].

To measure the impact of education on students, this study adopts the Knowledge–Attitude–Practice (KAP) theoretical framework. Accordingly, learners' awareness is comprehensively assessed through three components: (1) knowledge of sustainable development, (2) attitudes toward sustainable values, and (3) corresponding practices [3]. This model not only helps quantify the current state of university students' awareness but also serves as an effective tool for measuring the transformation from understanding into concrete action after educational interventions.

Among educational intervention approaches, Project-Based Learning (PBL) has emerged as an effective pedagogical method for promoting this KAP cycle. PBL is a learner-centered teaching method that guides learners to acquire knowledge and skills by carrying out a specific project to solve a problem [12]. Through this approach, learners are encouraged to address real-world problems, strengthen critical thinking, and actively engage in social issues [13], [14]. The combination of the KAP model and the PBL approach not only helps assess students' awareness of the SDGs but also creates conditions for transforming knowledge and attitudes into concrete actions in both learning and daily life.

3. Research questions and research methodology

3.1. Research questions

- RQ1: What was the current state of knowledge, attitudes,

and practices (KAP) regarding the 17 SDGs among students at the UD-UFLS, before their exposure to the project?

- RQ2: How did exposure to the products of the “Youth For Change” project affect students' KAP regarding the SDGs?

- RQ3: What factors in the project promoted or hindered changes in KAP?

3.2. Research design

This study was conducted using a quasi-experimental approach to assess the impact of educational communication products on the SDGs among students in the context of applying the Project-Based Learning model. The research design employed a pre-survey and post-survey intervention model, while also incorporating a qualitative method, namely interviews, to comprehensively evaluate the impact of the project as well as the extent to which students received and transformed SDG-related messages during their participation.

3.3. Research participants

Among the 365 initial responses, this study focused on analyzing data from 77 students who participated throughout the intervention process and completed the pre-survey and post-survey comparison. The research sample represented a diverse range of students from first-year to fourth-year levels: first-year students ($N = 32$), second-year students ($N = 11$), third-year students ($N = 23$), and fourth-year students ($N = 10$). The participants came from nine faculties and one language division at UD-UFLS.

The largest groups included students from the Faculty of Foreign Language Teacher Education ($N = 20$), the Faculty of English ($N = 14$), Korean Language, and English for Specific Purposes, each with $N = 8$. The remaining units contributed between four and seven students each. From this group, 16 students were selected for in-depth interviews to explore the factors that promoted or hindered changes in KAP.

3.4. Research instruments

This study employed a questionnaire and semi-structured interviews to collect quantitative and qualitative data on students' knowledge, attitudes, and practices related to the 17 SDGs. The KAP questionnaire was adapted from previous studies [3], [15], [16]. It consisted of 67 items measured on a five-point Likert scale and was divided into four content groups: general knowledge of the SDGs (5 items), specific knowledge of the 17 goals (19 items), attitudes toward the SDGs (20 items), and sustainable practices (23 items).

The results of the Cronbach's Alpha analysis showed that the Cronbach's Alpha coefficient for all 67 observed variables reached 0.984, indicating that the questionnaire had very high reliability and was appropriate for use in this study. In addition, the semi-structured interview protocol consisted of six questions adapted from the study by [17], aiming to explore in greater depth students' experiences of accessing the project content and changes in their knowledge, attitudes, and practices related to the SDGs through the “Youth For Change” project.

3.5. Intervention process through the project

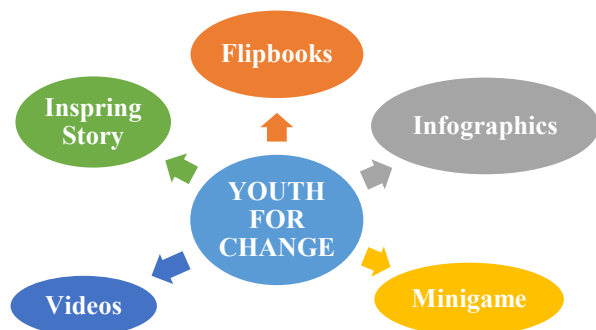


Figure 1. Communication product ecosystem of the Youth For Change project

“Youth For Change” was a communication project founded by a group of five students from the Faculty of Foreign Language Teacher Education, UD-UFLS, within the framework of the Project course. The project aimed to enhance UD-UFLS students’ knowledge, attitudes, and practices regarding the 17 SDGs.

The project implemented a set of multimedia communication tools based on the PBL model, including three main groups of products: (1) knowledge-provision products comprising bilingual infographics and bilingual flipbooks; (2) attitude-shaping products comprising inspirational posts and minigames; and (3) practice-promotion products comprising instructional videos on green actions. All content was distributed via social media platforms to optimize student accessibility.

3.6. Data analysis

Quantitative data from the questionnaire were coded and processed using SPSS software. The scales were converted into scores to calculate mean values, after which a Paired Samples T-test was applied to compare pre-survey and post-survey results.

Qualitative data from the semi-structured interviews were analyzed using thematic analysis following the model of [18], through the steps of coding, grouping ideas, and identifying key themes.

4. Research findings and discussion

4.1. Students’ KAP regarding the SDGs before the intervention (responding to RQ1)

Table 1. Pre-survey results on students’ KAP regarding the SDGs

	Mean	Std. Deviation
Mean_Pre-Knowledge	2.91	1.40
Mean_Pre-Attitude	2.99	1.45
Mean_Pre-Practice	2.54	1.32

The pre-intervention survey results, or pre-survey results, show that participants’ levels of KAP regarding sustainable development were generally low to moderate. Specifically, the mean score for Knowledge was $M = 2.91$, $SD = 1.40$, that for Attitude was $M = 2.99$, $SD = 1.45$, while Practice recorded the lowest level at $M = 2.54$, $SD = 1.32$. This indicates that although students had some initial knowledge of sustainable development, their level of understanding and practical application remained limited

before the project was implemented.

In terms of Knowledge, the variables from GK1_pre to GK5_pre had mean scores ranging from 2.12 to 2.42, reflecting a limited level of knowledge. For example, K2_pre - “Sustainable development requires ending hunger and malnutrition in all forms” - related to SDG 2 - Zero Hunger, reached $M = 2.58$, $SD = 1.59$. Compared with the study [3], in which the mean scores ranged only from 1.27 to 1.72, the results of this study were higher. However, the overall level of knowledge was still not high, indicating that learners’ knowledge of specific aspects of sustainable development remained limited and needed improvement.

Regarding Attitude, A1_pre, related to SDG 1 - No Poverty - “When witnessing the difficult living conditions that some people in the world have to endure, I feel responsible for doing something” - reached $M = 2.74$, $SD = 1.67$, indicating that students’ viewpoints were still divided. Meanwhile, study [3] recorded $M = 1.59$, $SD = 0.60$, with a lower mean score but a smaller standard deviation, suggesting a more stable level of agreement.

Similarly, in terms of Practice, the P_pre variables had mean scores ranging from 1.78 to below 3.13, indicating that practices related to the SDGs were not performed frequently. For instance, P8_pre - “I show equal respect for men and women, boys and girls” - related to SDG 5 - Gender Equality, reached $M = 3.08$, $SD = 1.84$. Compared with study [13], which reported $M = 2.70$, $SD = 1.28$, the mean score was higher, but the standard deviation was also larger, indicating that students’ attitudes were not truly consistent.

Overall, the pre-survey results show that participants’ KAP levels remained limited, thereby emphasizing the need for intervention activities to enhance students’ knowledge, attitudes, and practices regarding sustainable development issues.

4.2. The impact of the “Youth For Change” project on Students’ KAP (responding to RQ2)

Table 2. T-test results on students’ KAP regarding the SDGs

	Mean	Std. Deviation	Mean Difference	Sig. (2-tailed)
Pre_Knowledge	2.91	1.40	-1.29	.000
Post_Knowledge	4.20	0.72		
Pre_Attitude	2.99	1.45	-1.31	.000
Post_Attitude	4.30	0.73		
Pre_Practice	2.54	1.32	-1.25	.000
Post_Practice	3.80	0.76		

The results of the Paired Samples T-test, presented in Table 2, confirm that the project had a significantly positive impact on all three KAP dimensions ($p < .001$). Among these, Attitude recorded the strongest improvement ($M = 4.30$), followed by Knowledge ($M = 4.20$), and finally Practice ($M = 3.80$).

Specifically, after the project ended, students’ knowledge of the 17 Sustainable Development Goals improved considerably ($M = 4.20$). At the same time, the level of understanding among students regarding these goals also became more consistent ($SD = 0.72$). Among the goals, knowledge related to SDG 2 - Zero Hunger showed

the greatest improvement. Specifically, for the statement “*Sustainable development requires ending hunger and malnutrition in all forms*,” the mean score increased from $M = 2.58$ to $M = 4.10$. This was followed by knowledge of SDG 3 - Good Health and Well-being, with the statement “*Improving opportunities for all people to live long and healthy lives contributes to sustainable development*” increasing from $M = 2.86$ to $M = 4.35$.

Similarly, students’ attitudes toward the 17 SDGs also showed positive changes, while differences in attitudes among students were significantly narrowed through the project ($M = 4.30$, $SD = 0.73$). This result indicates that students became increasingly aware of the importance of these goals for both their personal lives and the community. Among the goals, SDG 12 - Responsible Consumption and Production recorded the most notable change in students’ attitudes. The statement “*I am more concerned about food waste*” showed a significant improvement, with the mean score increasing from $M = 2.66$ to $M = 4.30$. Regarding SDG 8 - Decent Work and Economic Growth, students’ attitudes also improved considerably. Specifically, the level of agreement with the statement “*I agree that boycotting companies with a bad reputation for employees’ working conditions is justified*” increased from $M = 2.65$ to $M = 4.26$.

In addition, the data also show that students’ sustainable practices improved to a certain extent ($M = 3.80$, $SD = 0.76$). Although practices were not yet carried out with high frequency, the results still indicate that the “Youth For Change” project achieved initial success in promoting sustainable practices among students. Among the goals, practices related to SDG 17 - Partnerships for the Goals recorded the most noticeable improvement. Specifically, for the statement “*I participate in initiatives, campaigns, projects, movements, and competitions for young people, such as Robocon*,” the mean score increased from $M = 1.91$ to $M = 2.40$. In addition, many students gradually developed sustainable practices related to SDG 12 - Responsible Consumption and Production. The level of practice for the statement “*I often eat less meat and maintain a vegetarian diet one day per week*” increased significantly from $M = 1.87$ to $M = 3.26$.

4.3. Factors promoting and hindering changes in KAP (responding to RQ3)

The interview results also show that the “Youth For Change” project had a positive impact on students’ KAP regarding the 17 SDGs.

In terms of knowledge, most students demonstrated a relatively limited level of understanding of the Sustainable Development Goals before participating in the project; some had even never heard of the concept. After the project ended, all participating students acknowledged the effectiveness of “Youth For Change” in conveying knowledge about the SDGs. They not only improved their general understanding of the 17 goals but also gained a clearer understanding of the content of each goal and the relationships among them in practice.

The interview results also indicate positive changes in students’ attitudes through the project. Most participants (15 out of 16) stated that they gradually became more aware

of their own roles and responsibilities in implementing the SDGs. This was reflected in the fact that more than half of the students began to pay attention to and actively learn more about the SDGs through various channels, such as articles, infographics, and related campaigns. At the same time, more than two-thirds of the students shared that they gradually recognized the importance of changing personal practices toward a sustainable lifestyle. In addition, the interview data show that students were particularly interested in several specific goals, notably SDG 12 - Responsible Consumption and Production, SDG 13 - Climate Action, and SDG 4 - Quality Education.

In terms of practice, the interview results show that most participants began to form and maintain sustainable lifestyle habits after following the project. These changes were mainly reflected in daily-life behaviors. Specifically, 13 students stated that they gradually developed habits such as saving electricity and water, sorting waste, and using cloth bags when shopping. In addition, P14 and P13 reported that they had adjusted their consumption choices in a more sustainable direction, such as prioritizing necessary, reusable, and environmentally friendly products. Moreover, some students actively participated in community activities, such as volunteer programs promoting green lifestyles (P12).

Regarding communication formats, most participants (11 out of 16) highly appreciated the visual nature of the project’s products. This indicates that graphic design played an important role in reducing the dryness of academic goals and contributing to improved information reception. Specifically, P9 stated that infographics, with their vivid and eye-catching presentation, made information more accessible and easier to remember. Meanwhile, the flipbook was highly valued by P10 and P12 for its clear and vivid illustrations, which helped viewers follow the content more easily.

Videos received the most attention, with five students mentioning them in the interviews. In particular, P5 stated that they were highly impressed by the project’s videos because the vivid moving images helped viewers easily visualize complex issues. In addition, explaining information through animation also helped viewers retain information longer than when receiving content in plain text form. Furthermore, interactive activities such as minigames were also considered a highlight, as they both helped students consolidate knowledge and encouraged them to actively learn about the SDGs (P7). P3 also expressed interest in this interactive communication format and shared: “I liked the quiz game with prizes the most - just by following the content and answering a few questions, I received a very cute tote bag and water bottle.”

The interview results also reveal several barriers to promoting sustainable practices among the student community. First, many students (10 out of 16) believed that the project implementation period was relatively short, making it difficult to form and maintain sustainable habits. In addition, although the project expanded its communication to various platforms, the level of interest and interaction on channels other than Facebook remained limited. Furthermore, several objective factors also hindered

sustainable practices, such as the cost of environmentally friendly products (P11) or long commuting distances, which made it difficult for students to avoid using motorbikes (P2). These findings suggest that transforming awareness into sustainable practices depends not only on the communication effectiveness of the project but is also influenced by the intervention duration and students' actual conditions.

Overall, the interview results are consistent with the quantitative data and show that the "Youth For Change" project contributed to enhancing students' knowledge and attitudes, while initially promoting their sustainable practices regarding the 17 SDGs.

5. Conclusion

This study has demonstrated the effectiveness of the PBL model through the "Youth For Change" communication campaign in transforming UD-UFLS students' awareness of the SDGs. The experimental results show statistically significant increases across all three dimensions of Knowledge, Attitude, and Practice, among which the development of critical thinking and social responsibility awareness represents an important highlight.

Despite these contributions, the study still has several limitations. The sample size was relatively small ($N = 77$) and there was no control group; therefore, the generalizability of the results as well as the ability to confirm causal relationships remains limited. At the same time, the research sample was mainly concentrated among students from the Faculty of Foreign Language Teacher Education and the Faculty of English, and thus did not fully reflect the diversity of the entire student population at the university. In addition, the project implementation period was relatively short, which may not have been sufficient to assess sustainable changes in students' practices. The study also did not provide an in-depth analysis of the influence of individual or contextual factors, such as economic conditions, on KAP outcomes.

Accordingly, future studies may expand the sample size, diversify the research participants, and adopt a design with a control group in order to enhance the reliability of the results. In addition, re-measuring students' level of practice through a delayed post-survey after several months would help assess the sustainability of behavioral changes more accurately.

To deepen education for sustainable development, this study proposes the following recommendations: (1) integrating the SDGs into language training programs as practical skill-based content; (2) establishing financial or infrastructural support mechanisms for green lifestyles on university campuses in order to reduce barriers to practice; and (3) maintaining student-managed digital communication platforms to create a regular interactive environment. Although the study remains limited in terms of sample size and follow-up duration, it has laid a foundation for applying PBL to SDG education, thereby contributing to the formation of a responsible generation of global citizens.

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