

Transformative English Language Learning through Project-Based Education: Nurturing Sustainability and 21st Century Skills in Undergraduate Engineering Students

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SRMIST







Understanding of concepts & theories

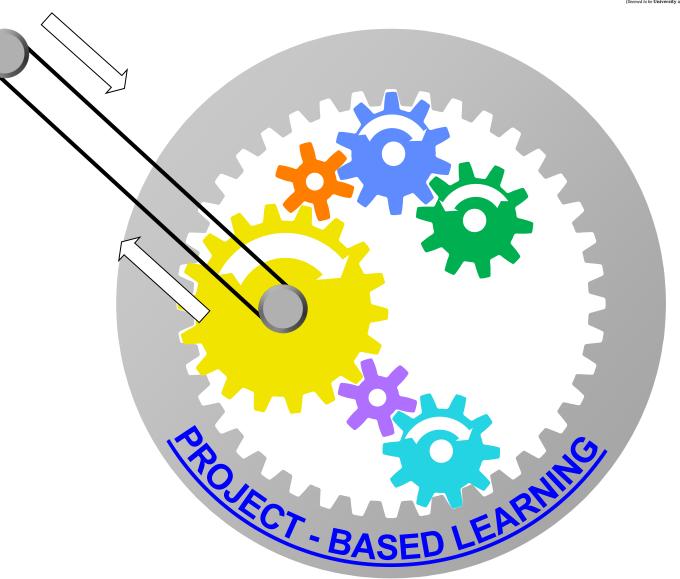
Life Skills and 21st century skills

Self-direction, communication & creativity

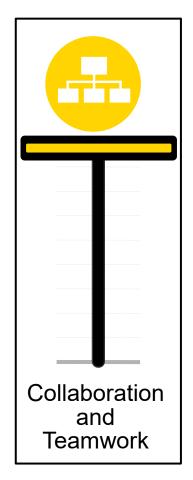
Better Learning Process

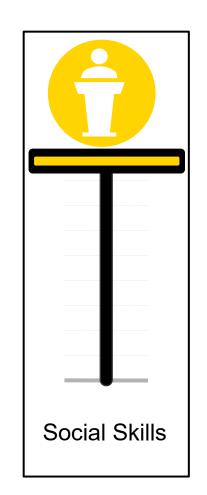
Well researched content and knowledge-acquisition

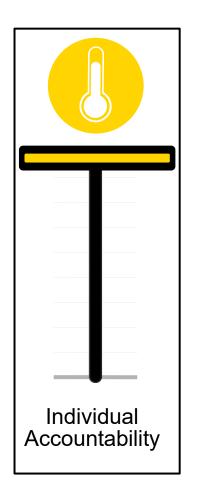
Focused on the solution to the problem

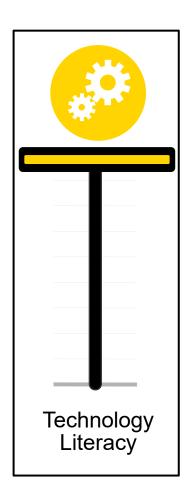


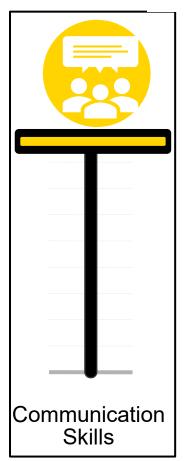












21ST CENTURY SKILLS

Principles of PBL – Learning by Doing!



CHOICE BASED



FEEDBACK & REVISION



AUTHENTIC



COLLABORATIVE



TIME FOR REFLECTION



PRESENTATIONS



Objectives of the Study

- To what extent does PBL approach develop the students' language proficiency?
- How does PBL approach, in a language classroom, enhance the 21st century skills?



METHODOLOGY









Qualitative Study

Purposive Sampling

Observations / Semi – Structured Questions

GD / Interviews





SCAFFOLDING

Pre-test

• Cloze test/ short paragraphs

Group Segregation

- Based on Pre-test results
- Mixed Group

Review - I

- Submission of Project Proposal
- Changes suggested

Group
Discussion - I



Review - II

• Prototype Submission

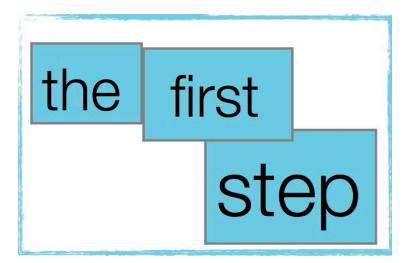
Group Discussion - II

Students Regrouped

Final Presentation

• Presentation of Projects

Feedback





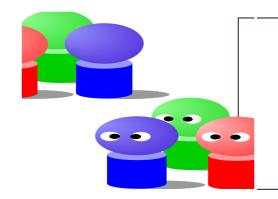


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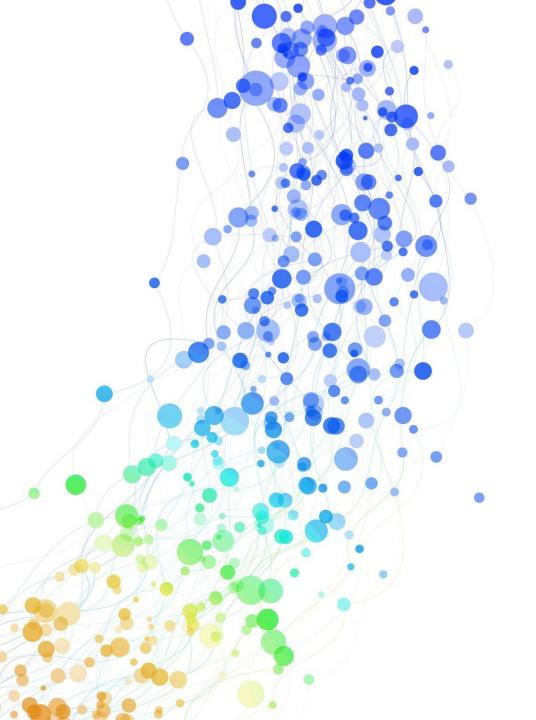
ANALYSIS/LEVELS

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GROUPING







HAND HOLDING

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- 1. Students were observed under the project's four themes: communication skills, individual accountability, social skills, group processing and technology literacy. This method is widely used in social science research.
- 2. Division into group able to acquire various skills in these diverse groups to enhance them as well as intragroup interpersonal interactions.
- 3. Group observations were conducted several times over a period of 10 weeks. Four themes were generated from the observational data:
- Student group work
- Student Individual
- Shared duties
- The interdependence of the student's work and their decision-making



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LEARNING PROPOSAL WRITING





Collaboration in groups:

- 1. project planning
- 2. creating the product
- 3. project presentation

Students discussed the project's title, description, and objectives, the project's implementation steps, the project schedule, and each group member's responsibilities.

Additionally, observations revealed that students leveraged social media platforms, such as WhatsApp group chats, zoom etc for discussions outside official hours.









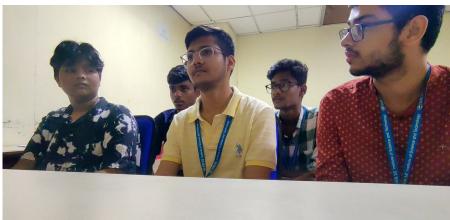














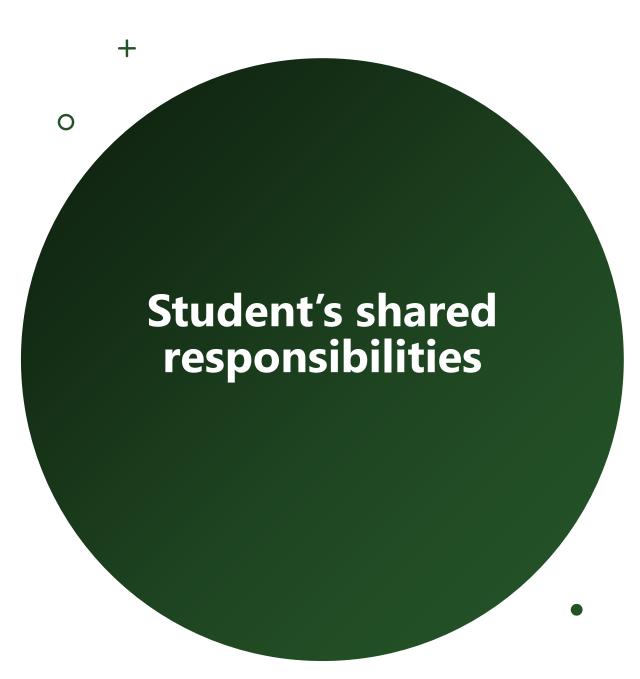
Reflective Thinking

SELF REFLECTION AND EVALUATION



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Observations:

- 1. each group assigned its members a task and set a deadline, ensuring students appropriately shared duties.
- 2. finish the related activities before the due date
- 3. when it was their chance to speak on what they had discovered about the project relevancy was being measured and the differences in the discoveries also was being gauged- students were sharing responsibility.
- 4. these circumstances demonstrated that each group member must collaborate to develop their awareness of many aspects and apply them to their project.
- 5. each student took part in constructing the presentation of their work on hard copy and also in outlining the presentation materials for their project presentation in front of the entire class and the external.







OBSERVATIONS

Made decisions regarding

- 1. the theme
- 2. the activities they would undertake
- 3. the project's timeline
- 4. individual roles within the group
- 5. the final product
- 6. the materials
- 7. tools required
- 8. determined the most effective method to present their project results to others.







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Chief Guest
Dr. Swati Patil
Director HR
iOPEX Technologies
Certified Coach



Co-ordinator
Dr L Kavitha Nair
Professor & Head
Department of English &
Foreign Languages

Date 04/12/2023 Time 8.30 am-12.30pm Venue- UB1301





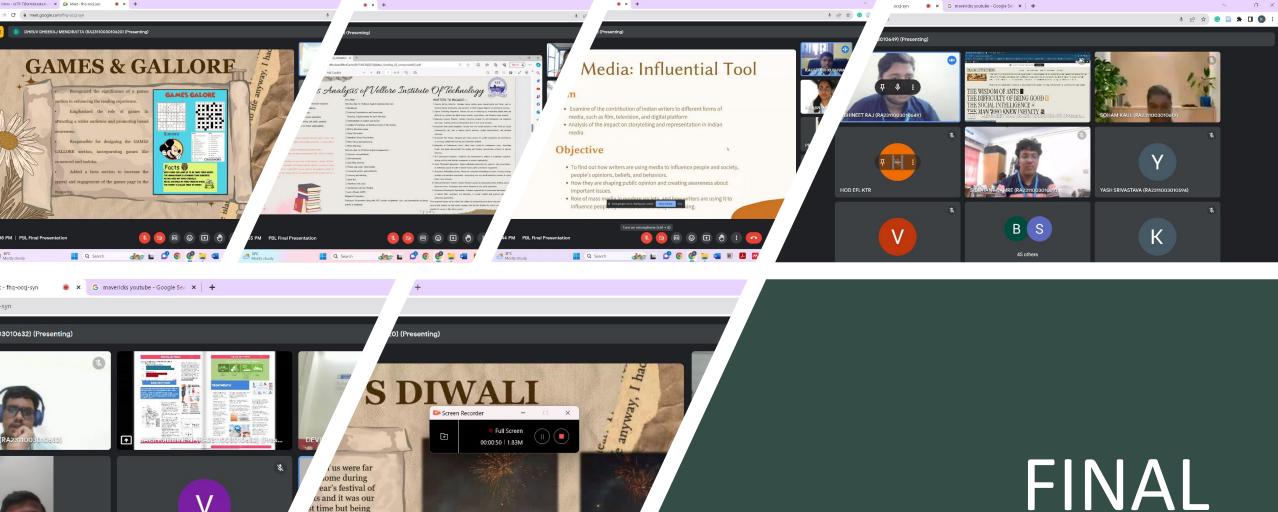












arrounded by the friends we made and our hostel roomies as

Q Search

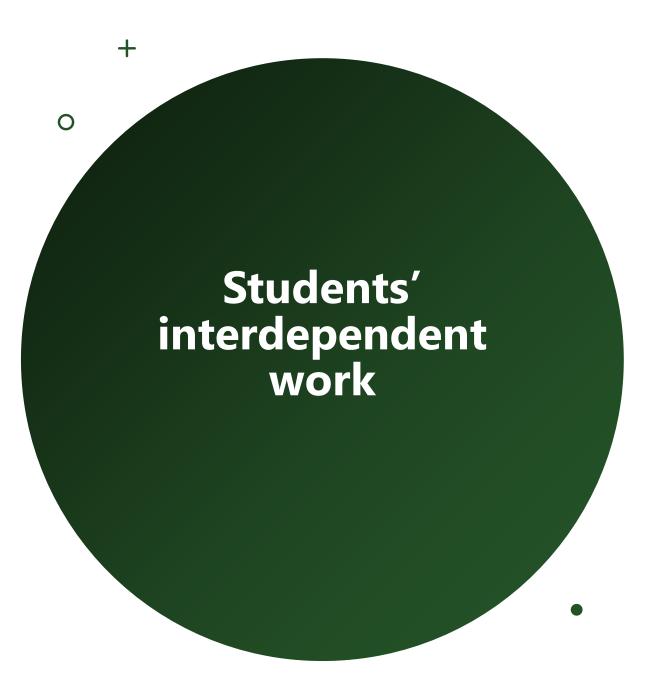
well as our day scholar friends, it was an amazing experience that will be remembered

VISHOK MANIKANTAN (RA2311003010650)

52 others

Q Search

FINAL PRESENTATION



From the observations:

- the task required each group member to find a solution together to the problems they faced as first years. They were to create a unique set of presentation materials, which were to be assembled into a cohesive presentation.
- They understood that, if any group member did not complete the task in time, it may cause a delay in the final presentation's completion.
 This circumstance demonstrated the interdependence of the student's contributions to the PBL.



LIST OF PROJECTS

1. Cosmic times:

https://cosmic.vishok.tech/

2. Meta division

https://metadivision662.website3.me

3. Short Film – Ayush Yadav

https://youtu.be/p3vMrXGDvfo?si=n_cefhLvplyri
mig)

4. Thomas and friends

atharvdwivedi2.website3.me

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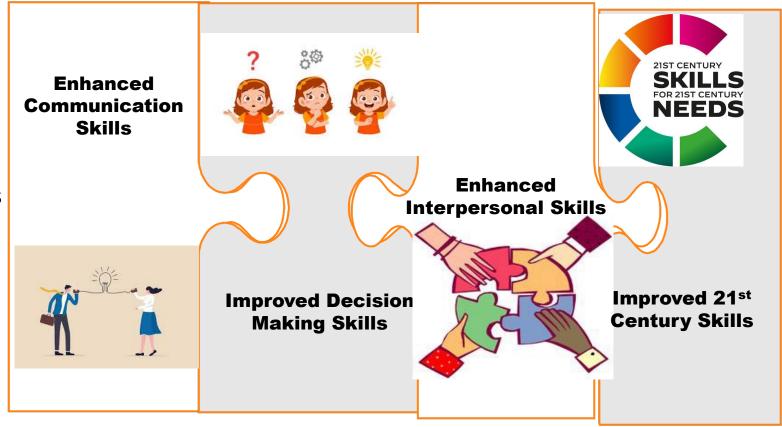


PBL – 1. A meaningful and effective pedagogical method

- 2. Enhances the learning process by situating knowledge within practical tasks
- 3. Equips students with essential life skills, with confidence and competence.

The findings from this study conclude that applying PBL in language learning class, enhances and ensures students' teamwork & social skills. When students share responsibility equitably, make crucial decisions, and produce an interdependent project product, they attain a high level of collaboration skills according to the criteria for twenty-first century skills.

CONCLUSION



Evaluation & Feedback

English Score

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Feedback

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https://www.nature.com/articles/s41599-023-01914-5

- Le HC, Nguyen VH, Nguyen TL (2023) Integrated STEM approaches and associated outcomes of K-12 student learning: a s
- Devanda B, Elizar E (2023) The effectiveness of the STEM project based learning approach in physics learning to improve scientific work skills of high school students. Int J Hum Educ Soc Sci 2(4):1219–1226ystematic review. Educ Sci 13(3):297
- DeCoito I, Briona LK (2023) Fostering an entrepreneurial mindset through project-based learning and digital technologies in STEM teacher education. In: Kaya-Capocci S, Peters-Burton E, (eds.), Enhancing entrepreneurial mindsets through STEM education. Springer International Publishing, Cham, p 195–222
- Dolmans DHJM (2019) How theory and design-based research can mature PBL practice and research. Adv Health Sci Educ Theory Pract 24(5):879–891
- Kiong TT, Rusly NSM, Abd Hamid RI, Swaran SCK, Hanapi Z (2022) Inventive problem-solving in project-based learning on design and technology: a needs analysis for module development. Asian J Univ Educ 18(1):271– 278
- Kollar I, Ufer S, Reichersdorfer E, Vogel F, Fischer F, Reiss K (2014) Effects of collaboration scripts and heuristic worked examples on the acquisition of mathematical argumentation skills of teacher students with different levels of prior achievement. Learn Instr 32:22–36
- Kurniahtunnisa K, Wowor EC (2023) Development of STEM-project based learning devices to train 4C skills of students. Bioeduca J Biol Educ 5(1):66–78
- Loyens SM, Van Meerten JE, Schaap L, Wijnia L (2023) Situating higher-order, critical, and critical-analytic thinking in problem-and project-based learning environments: a systematic review. Educ Psychol Rev 35(2):39
- Markula A, Aksela M (2022) The key characteristics of project-based learning: how teachers implement projects in K-12 science education. Discip Interdiscip Sci Educ Res 4(1):1–17
- Mutakinati L, Anwari I, Kumano Y (2018) Analysis of Students' critical thinking skill of middle school through STEM education project-based learning. J Pendidik IPA Indones 7(1):54–65
- Pan AJ, Lai CF, Kuo HC (2023) Investigating the impact of a possibility-thinking integrated project-based learning history course on high school students' creativity, learning motivation, and history knowledge. Think Skills Creat 47:101214





