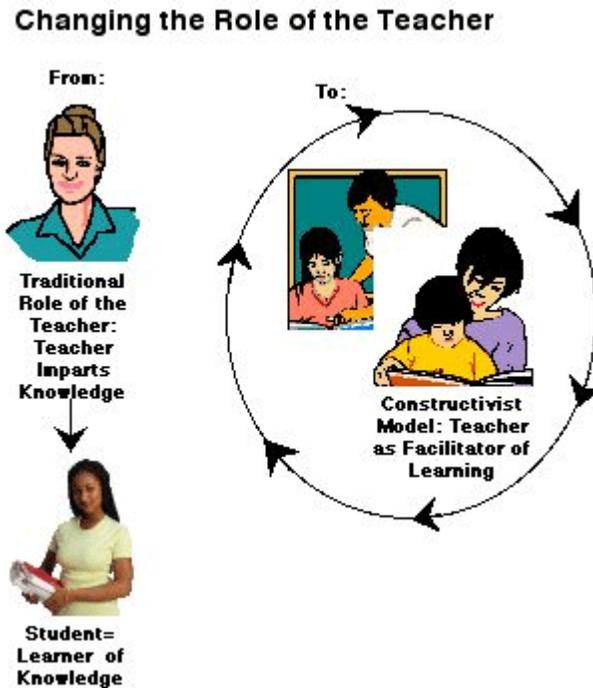


Project Based Learning: Alternative of Teaching and Learning Model for Pre- service Teacher Education in TVET

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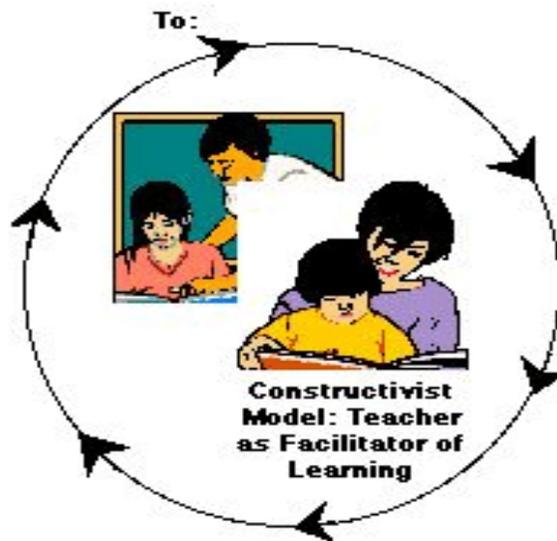


Changing the Role of The Teacher

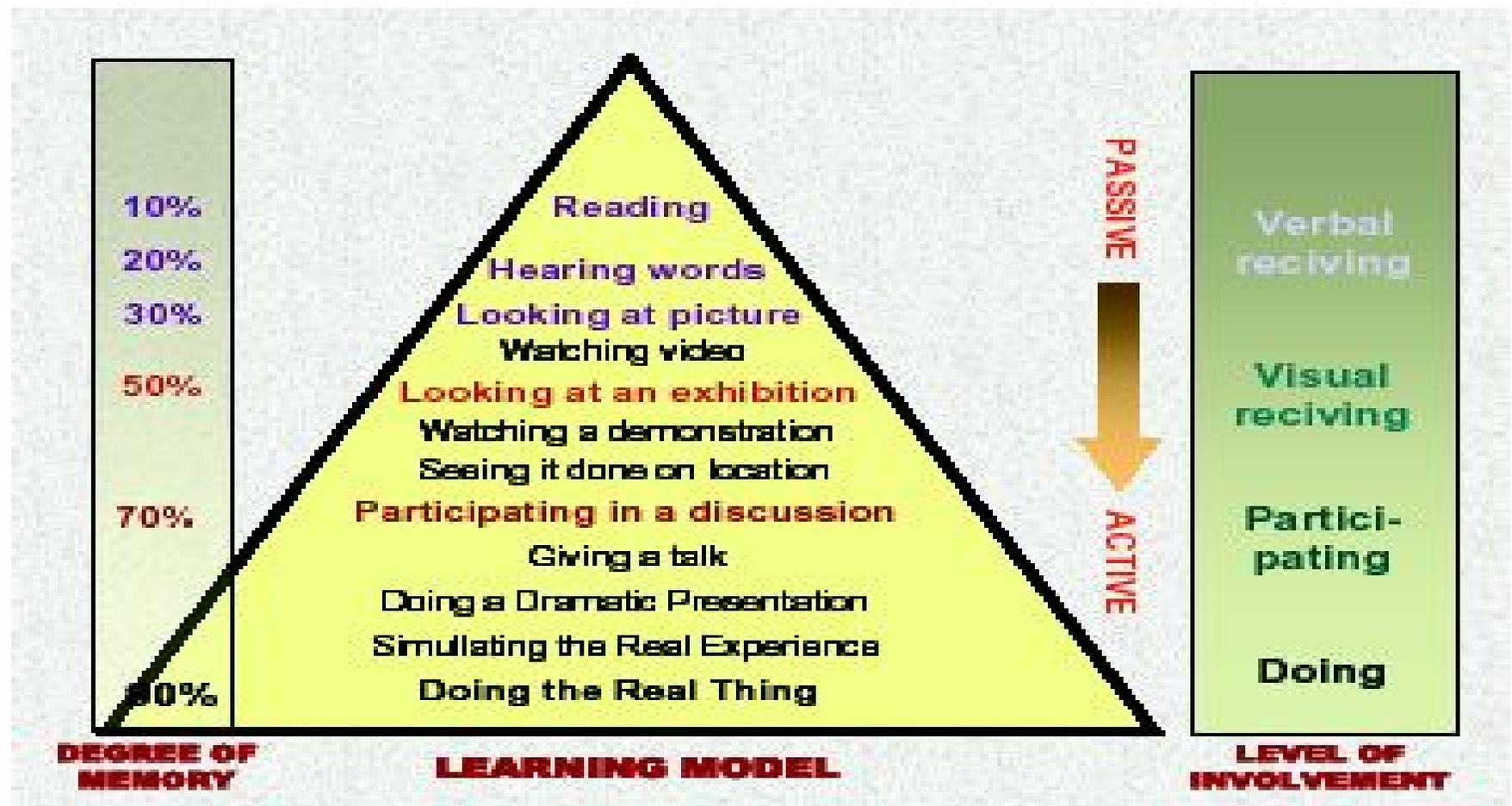


- *The lecturer's role changes as well. The lecturer is no longer the center of attention as the dispenser of information, but rather plays the role of facilitator, setting project goals and providing guidelines and resources, moving from student to student or group to group, providing suggestions and support for student activity.*

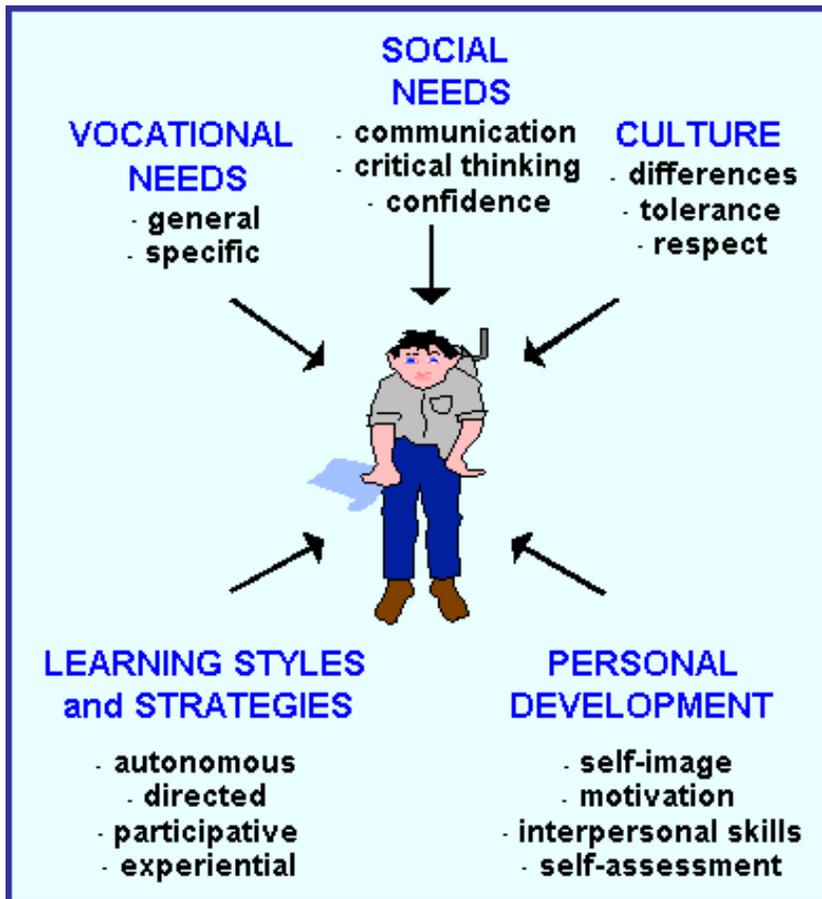
Changing the Role of The Teacher



- *Constructivism gained attention for several reasons, such as learner-centered approach and active participation of students. In classes where constructivist approaches are implemented, students have a chance of learning by doing, enhancing their critical skills, and shaping their learning process by being active participants.*



*"I hear and I forget.
I see and I remember.
I do and I understand."
(Confucius)*



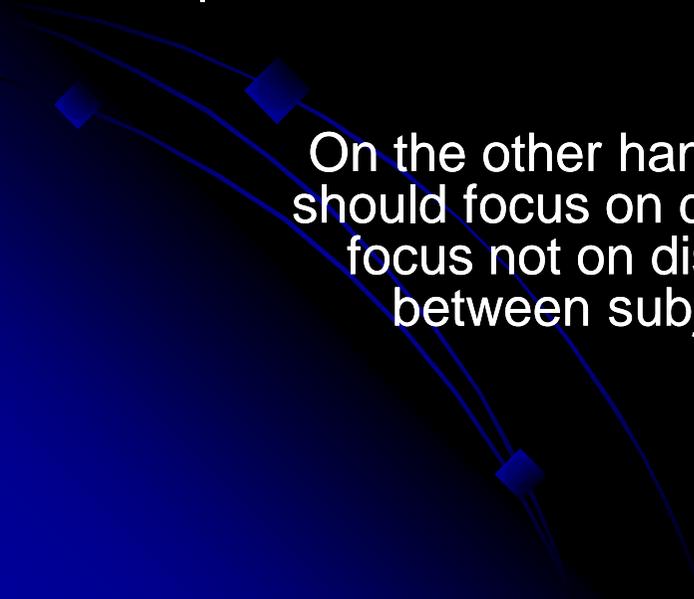
➤ in higher education today students must be supported to develop specific expertise and knowledge in their chosen discipline and also facilitated to develop 'the skills necessary for employment and for life as a responsibility citizen' (Fallows and Steve 2000).

➤ In a group learning context students are facilitated to develop key skills such as communication and teamwork. Students can only become proficient in a skill by practicing it and in a group learning context the students have to learn how to work within a group and listen and negotiate with others in order to resolve dilemmas or conflicts.

➤ These are important skills for students to develop as research indicates that employers worldwide want graduates who have well developed communication, teamwork and problem solving skills.

TVET orienting for sustainable development that the economic imperative needs to increase levels of productivity through widespread of technology and knowledge. It needs skilled workers in transformed, high performance workplaces, which require all workers to understand problem, contribute solution, be adaptable and new skills, measure quality on regular basis, and learn from mistakes.

Lynch (2000) recommend to teach all students to new levels of higher order thinking, to teach youth how to think, not just what to think, to think critically, to think creatively, make decisions, solve problems, visualize a solution, reason, analyze, interpret and how to continue to learn.

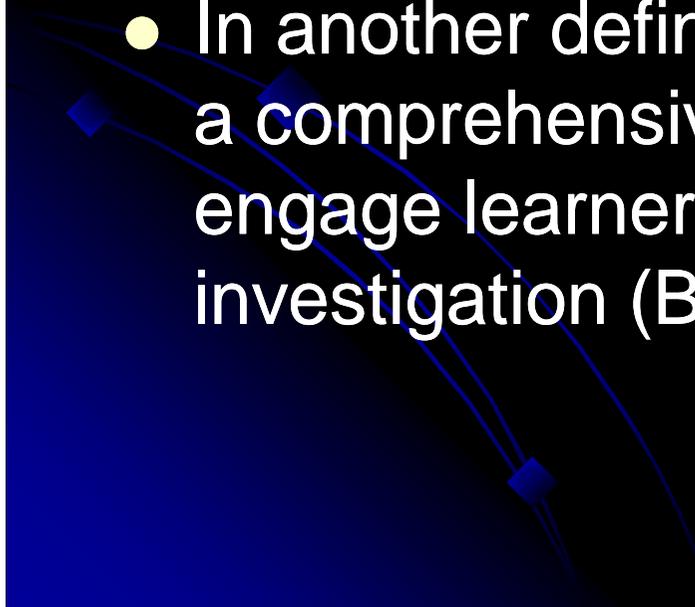


On the other hand for prepared pre service teacher in TVET we should focus on developing they are for new roles as leaders, to focus not on disciplines, but rather on contextual relationships between subject matter and integrated work based contexts meaningful to students at the time.



Project-based learning is one of the methods grounded in constructivism by supporting student engagement in problem-solving situations. Students in a project-based learning environment deal with real-life problems, which may result in permanent knowledge.

Definitions Project Based Learning

- Project-based learning, or Group Investigation (Sharan, 1998) is a form of cooperative learning that contextualizes learning by presenting learners with problems to solve or products to develop (Katz, 1994).
 - In another definitions Project-Based Learning is a comprehensive instructional approach to engage learners in sustained, cooperative investigation (Bransford & Stein, 1993).
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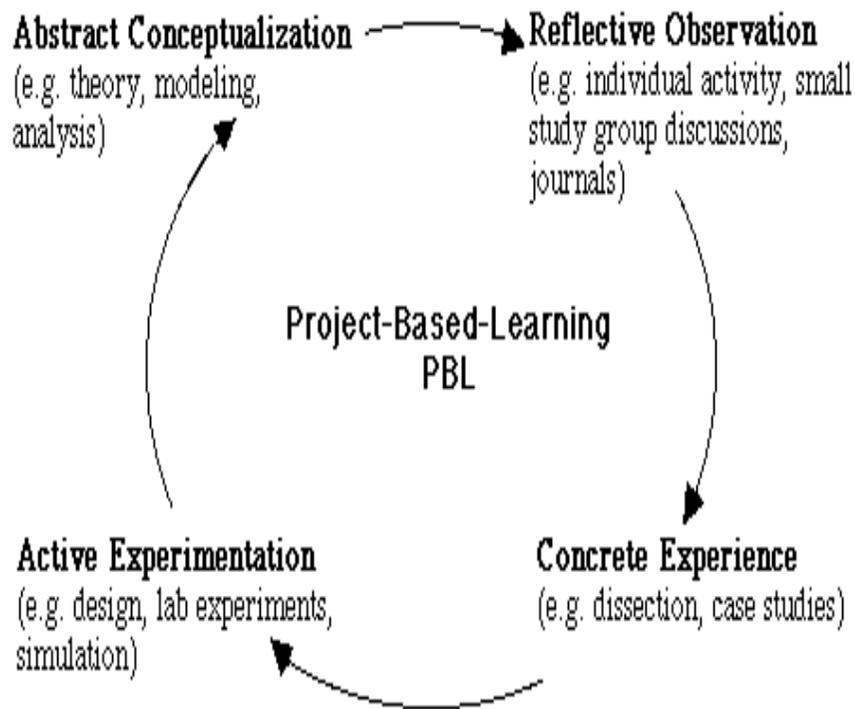
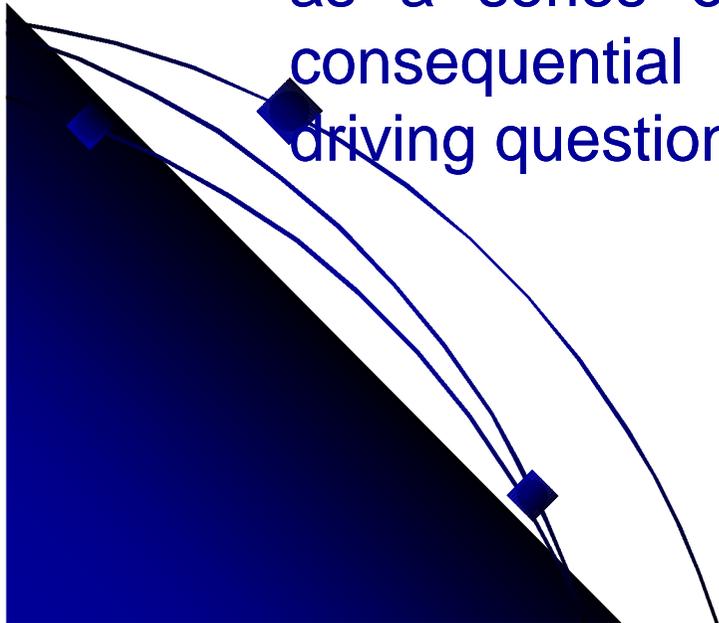


Figure 1 Kolb's [1] model of experiential learning. Students learn in four different ways. Kolb proposed that a cycle of experiences improves understanding and builds bridges between theory and practice. This is a qualitatively satisfying view of project-based-learning as well as learning in general. It remains a challenge to objectively, even quantitatively, demonstrate performance improvements when this iterative experience pattern is experienced.

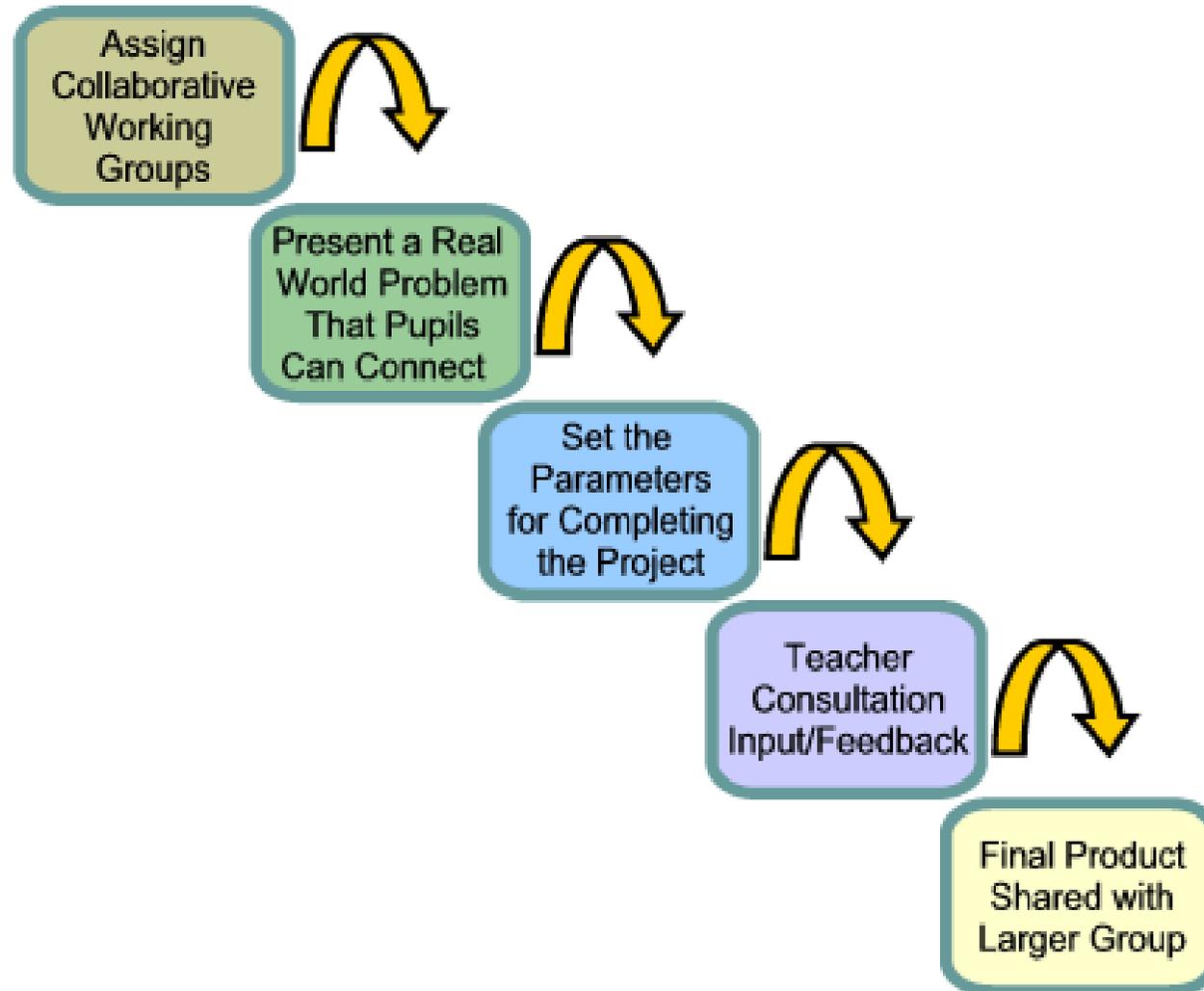
According to current research (Thomas, Mergendoller, & Michaelson, 1999; Brown & Campione, 1994; <http://www.ed.gov>), projects are complex tasks, based on challenging questions, that serve to organize and drive activities, which taken as a whole amount to a meaningful project. They give learners the opportunity to work relatively autonomously over extended periods of time and culminate in realistic products or presentations as a series of artifacts, personal communication, or consequential tasks that meaningfully address the driving question.



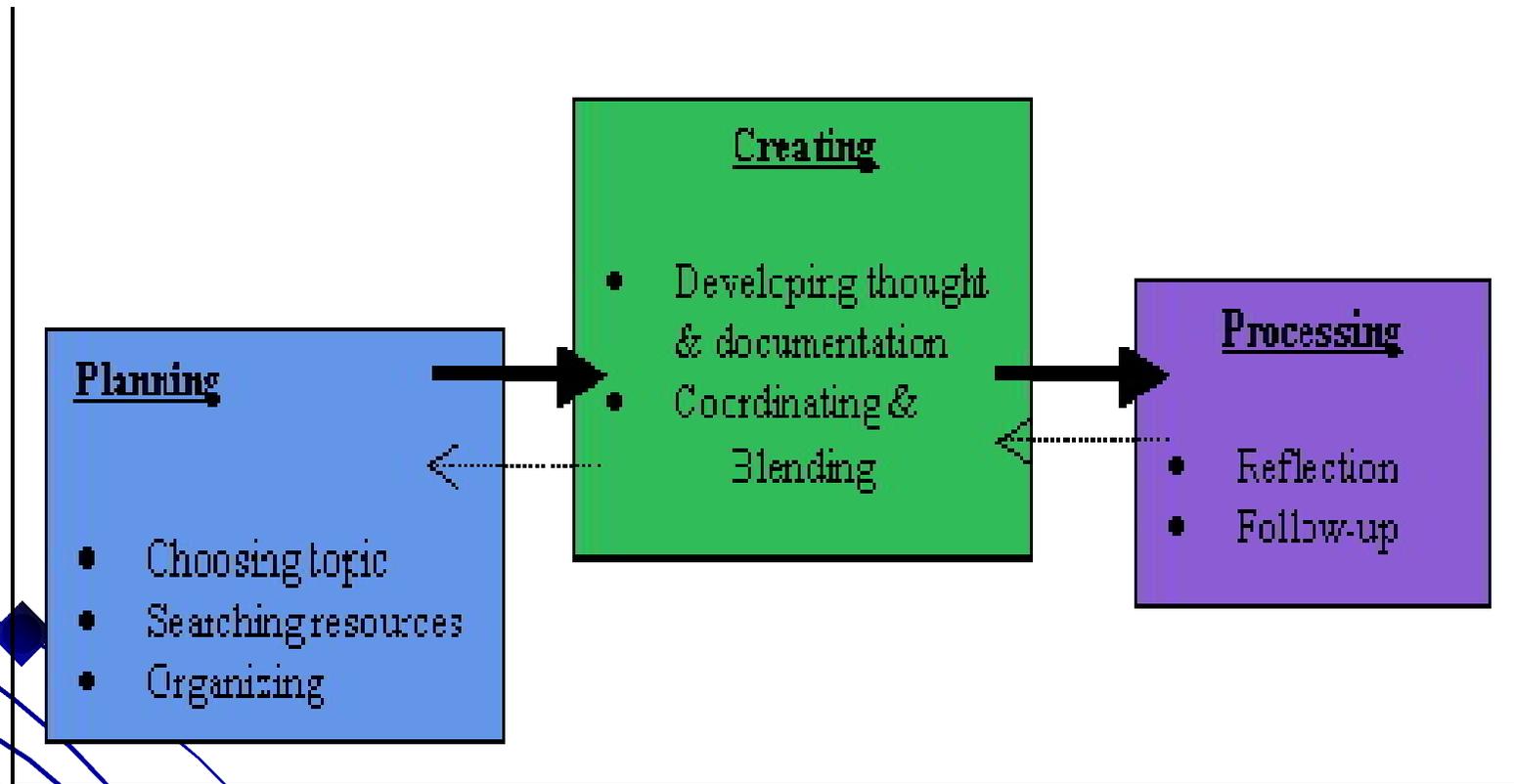


Project-Based Learning is a teaching and learning strategy that engages learners in complex activities. It usually requires multiple stages and an extended duration--more than a few class periods and up to a full semester. Projects focus on the creation of a product or performance, and generally call upon learners to choose and organize their activities, conduct research, and synthesize information.

Project-based Teaching Strategy



Generally, three phases can be suggested in conducting Project-Based Learning: planning, creating and implementing, and the processing.



General framework of Project-Based Learning

In the planning phase, the learner chooses the topic, searches for resources for needed information, and organizes the resources into an usable form.

In the implementation or creation phase, the learner develops the project idea, combines the contributions of the group, and builds the project.



In the processing phase, the project is shared with other groups, feedback is obtained, and then the groups reflect on the project.



Outstanding projects based learning:

- Recognize students' inherent drive to learn, their capability to do important work, and their need to be taken seriously by putting them at the center of the learning process.
- Engage students in the central concepts and principles of a discipline. The project work is central rather than peripheral to the curriculum.
- Highlight provocative issues or questions that lead students to in-depth exploration of authentic and important topics.
- Require the use of essential tools and skills, including technology, for learning, self-management, and project management.
- Specify products that solve problems, explain dilemmas, or present information generated through investigation, research, or reasoning.
- Include multiple products that permit frequent feedback and consistent opportunities for students to learn from experience.
- Use performance-based assessments that communicate high expectations, present rigorous challenges, and require a range of skills and knowledge.
- Encourage collaboration in some form, either through small groups, student-led presentations, or whole-class evaluations of project results.



Seven can be identified as key components of Project-Based Learning. These features can be used in describing, assessing, and planning for projects. They are:

- Learner-centered environment
- Collaboration
- Curricular content
- Authentic tasks
- Multiple expression modes
- Emphasis on time management
- Innovative assessment



The advantages in PBL learning

- Increased motivation
- Increased problem-solving ability
- Improved media research skills
- Increased collaboration
- Increased resource management skills



Advice to teacher who implemented project based learning as teaching learning model

- **More than an end product.**
- **Start with what you already are doing.**
- **Begin and end with the standards.**
- **Focus on assessments.**
- **Make it fun**



Conclusion

Project-based learning offers an engaging instructional method to make learners active constructors of knowledge. Rooted in constructivism and cooperative/collaborative learning, project-based learning has strong theoretical support for successful achievement. The using of project-based learning can help pre-service teachers in TVET assemble small and seemingly fragmented details of their technology training into a unified and coherent whole. As the completion of a project forces them to engage in a more complex process of inquiry and design than do more routine and repetitive classroom exercises, their competencies develop more rapidly, and their appreciation for the opportunistic using of technology in their future classrooms is enhanced. Furthermore, such experiences ideally provide opportunities for greater cooperative learning among pre-service teachers and collaborative learning between pre-service teachers and more experienced professional.

Hatur Nuhun

