**Problem Based learning VS Multiple intelligence**

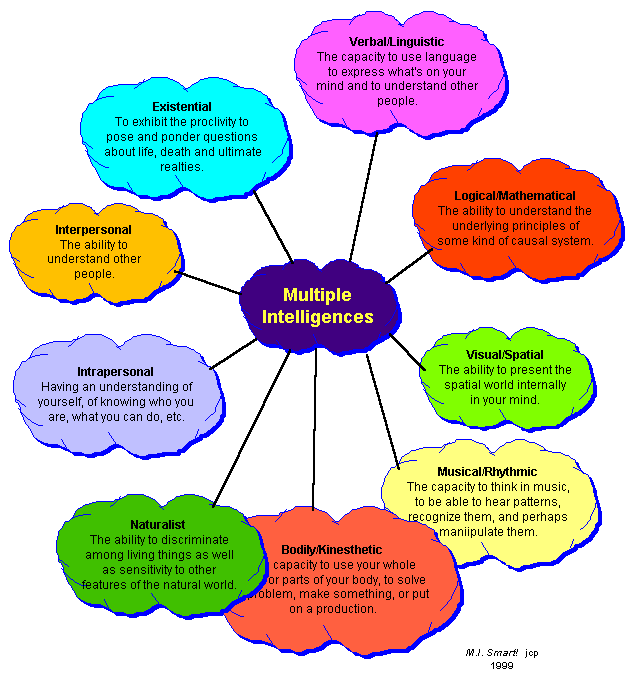
Problem based learning (PBL) and Gardener's multiple intelligences (MI) theories are two learning models which have some things in common. These two models are indirect method of teaching. Both are learner-centered models. The teachers are guiders or facilitators. Students in both models work in groups cooperatively. Students in these two models have competition sense. However, there are some different aspects between PBL and MI.

Teachers in PBL works as guider who support the process by providing some suitable resources and asking some questions. They also lead the discussion and formulate some evaluation methods. The aim of this model is to enable students to figure out what they need to know while they are working in groups in order to solve problems. They are the responsible for their learning. They are free to choose the appropriate tools for their learning with support of their teacher. PBL helps students to gain knowledge while they are communicate with peers, solve problems and improve their self-directed learning skills. Students need some background knowledge to be effective learners before practicing. PBL helps students to know how to learn, collaborate, and solve problems.

Multiple intelligences theory presents simple methods to explain people's preferred ways to learn. This model is an aid to understand personalities and preferences which may be mixture in each person. There are nine multiple intelligences. Linguistics intelligence is the first type which means the ability to use words and language effectively. Logical and mathematical intelligence is the one that focus on numbers. Musical intelligence means the ability to be aware of sounds and its usage. Kinesthetic intelligence deals with body movement and how to control it. Spatial and visual one means the ability to understand the relationship between images and meanings. Interpersonal intelligence is the ability to relate to others. Intrapersonal intelligence is having self-awareness. Naturalist intelligence is the ability to recognize the relationship to the nature. The last one is existential intelligence for people who think a lot of existential issues.

These types of intelligence indicate methods in which students prefer to learn, develop their strengths and overcome their weaknesses. However, teachers first need to make pre-test to determine the intelligence order for each students. Then, teachers have the freedom to divide the class according to the shared intelligence to work together or mixed groups with different intelligences. After that teachers must prepare some activities for the students in order to improve their ability. This model helps to discover different types of talents and value people for who they are and what they can do. It also helps them to achieve their own goals.

Problem Based Learning Model Multiple Intelligence Theory

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| Criteria | PBL | MI |
| Relative Student-centeredness | Student centered | Student centered |
| Assessment | Students are assessed according to their content knowledge and participation | This model is used not to assess student, but to identify their strengths and intelligences |
| Ease of Use | Easy | Easy |
| The organization of the class | Students work collaboratively in groups | Students work in groups with either shared or mix intelligences |