Transforming Learning Objects to Learning Processes

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Background

- Adult learning is a process that involves active learning and building knowledge by the learners.
- This process uses learning materials to construct the schema of understanding.
- Various learning objects (LOs) are used for this purpose e.g.: books, journals, videos, etc.
- In addition to providing information, lectures are also used to induce and facilitate the process of learning.
- However, facilitating the process of learning is more important than providing the learning materials.
- Even though the difference between the two roles of the lecture is crucial, many teachers focus on delivering the information more than facilitating the learning process.
- This contradicts the goals of education and active learning.
- To achieve learning, the learning process must be enhanced by the educational activities.

Methods

- LOs and educational activities can be transformed to learning process by focusing on mental activities of the learners rather than purely providing materials to learn from.
- Structuring learning objects to promote interaction, thoughtful searching, analyzing, and concluding will transfer the learning objects to learning processes.
- This transformation requires constructing new approach and format to establish a learning process serving as an educational base that is centered on the mental activity of the learner.



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- Learners go through a complex intellectual process of learning that involves multiple steps of exposure to information, processing, analyzing, critiquing, and constructing own knowledge.
- For education to happen, the focus should be on inducing facilitating, and optimizing this process. These materials and learning objects can be designed to enhance these learning processes.
- The common example is Khan Academy that has an extensive library of learning objects in videos.
- Integrating steps and components in these learning objects that: will give learners the option of how to and where to proceed, encourage them to set learning goals, urge them to critically think, and stimulate them to conclude so they construct their own knowledge that they can apply and build on. These integrated activities should make up the main scheme of teaching in groups like lecturing.
- They transform using and constructing group learning activities from learning materials where learners find knowledge into learning processes where learners actively construct knowledge.
- The flip-classroom teaching approach uses a highly learner-centered and adult educational style with teachers' role focused on facilitation and support of learners to construct their own knowledge. This is mainly the second part of the activity where learners spend time with their teacher to optimize learning the topic.
- The first part depends almost entirely on the learners where they study the topic on their own. Most studying is simply reviewing a theory in chapters, video recorded lectures, or other sources of information.
- The learners have a very limited role in what to study and how. Optimizing the use and outcomes of the flip-classroom relies on upgrading the format and style of the first component where the students prepare by studying the materials of the topic that were designed, selected, or advised by the educator. It is an educator-controlled activity.
- To make it more independent, self-directed, and adult style of learning, options must be provided to learners of what to learn, in what depth, and how.
- This is applied by providing the study materials at multiple levels of depth and in various formats.
- Multiple levels of details and depth are made available to the interested learners in various formats (pictures, table, demonstration, videos, and diagrams).
- The variety of resources would be the learner's choice of how, and to what depth, they want to study and learn about each part of the topic.
- Learning then will be completely led by the learner in terms of the speed, sequence, forms, and depth of learning through making all these options available in the provided materials.

Results

- Consequently, learners construct their own understanding and knowledge actively and independently.
- The flip-classroom concept will be completely based on adult and learner-centered education approach that follows the constructivism learning theory.
- Efforts to monitor and finetune the elements and processes should be exerted on a regular basis.
- Feedback and learners input guide the efforts of quality monitoring.



Conclusions

- Integrating specifically designed educational components and steps **transforms learning objects to a learning process** that could play the role of the educators rather than the source of information.

References

- Tuma F, Aljazeeri J. Asynchronous group learning in learn from the learner approach: A Learning Object That Enhances and Facilitates Distance Self and Shared Learning. Ann Med Surg (Lond). 2021 Jul 2;67:102535. doi: 10.1016/j.amsu.2021.102535. PMID: 34295464; PMCID: PMC8282459.
- Tuma F. Evaluating Operative Skills Using Video-Recording-Aided Objective Test. Surg Innov. 2020 Oct;27(5):421-423. doi: 10.1177/1553350620965818. Epub 2020 Oct 6. PMID: 33
- Tuma F. Training on Standardized Surgical Skills as Building Units. Surg Innov. 2021 Feb;28(1):5-6. doi: 10.1177/1553350621999295. Epub 2021 Feb 24. PMID: 33625279.