

DISCOVERING METHOD – SUCCESSFUL PATH TO IELTS

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Abstract: *education is in the midst of great change. The role of the teacher, the common core, and the way the content is being taught to students are just a few examples of areas that are undergoing this change. Specifically, the concept of discovery learning is making its way to the classroom. I was first introduced to the idea of discovery learning in my Math Education courses. Keywords: discovery, action, motivation, idea, communication, discovery learning, positive techniques, cognitive , demand, uncovering.*

IELTS (International English Language Testing System) is an international exam for foreign students, which is one of the main requirements for studying abroad. Before enrolling in universities around the world, the main requirement for all students in Central Asia, including Tajikistan, is an IELTS certificate with a specified number of points scored. Preparation for the IELTS exams, which is the final step. The level of professional proficiency in English. The Discovery method is one of the main methods for preparing students from scratch to a high IELTS level.

In Tajikistan, this method is practiced only in specialized training centers and is one of the effective teaching methods. The true ways for get great results we will use special method called Discovery method When I first heard this, it was just a new way to allow students distend topics. It was not until my

placement for one of my classes, Project Focus, that I saw discovery learning in action. I was interested in how the typical role of a teacher shifted, and how the cognitive demand increased for the students. The students became more of the center. I remember when I was shown this type of learning; I was frustrated with the teacher breaking what I considered normal which made it difficult for me to come to a conclusion by my own opinion. I have also heard many secondary school teachers' thoughts on discovery learning which for the most part have been more on the negative side. It seems necessary to explore further the effect that discovery learning can have. My motive for doing this study comes from personal experiences which I have previously described.

Introduce: according to scientific research, to discover something implies that we are bringing to light an idea, uncovering something we have been searching for, or to simply come across a new idea. Combining this and education leads to discovery learning. Discovery learning is a method used in the classroom that encompasses many positive techniques. Experience, communication, and interaction are just a few aspects of discovery learning. This type of learning allows students to take responsibility for their own learning and understanding. It breaks the traditional norms where the teacher is the major role, and allows the students to engage in a way they have not before (Meece, 2002). In 2006, an article was published that believed this type of learning had negative influence in the classroom. Kirschner, Sweller, and Clark state, "The goal of this article is to suggest that based on our current knowledge of human cognitive architecture, minimally guided instruction is likely to be ineffective"(Clark, 2006, p.3). After gaining more understanding on discovery learning and realizing how controversial this subject is, I became more interested in exploring this concept ,perspective role.

"Discovery learning can have a lasting impact because learners not only experience the content, they also improve."(Rillero, 2013,pg.2). After multiple

experiences in a classroom and being a student myself, I know what it mean to strictly learn material for a test, and then immediately forget about it. Experiencing content, instead of being handed content, leads to a certain level of improvement which Weimer believes is vital. Along with experience and improvement, students become more involved and engaged. Weimer states, Constructivism prescribes a whole new level of student involvement with content. It makes content much more the means to knowledge than the end of it. It and the empirical way of psychology change the function of content so it is less about covering it and more about using it to develop unique and individual ways of understanding (Weimer, 2002,p.12).

So often, it is about the content. Weimer (2002) believes that it is not about just the content, but rather about gaining understanding.

Learner – Centered Teaching Discovery learning falls into the category of Learner- Centered Teaching, also known as student-centered teaching. In a traditional classroom, the teacher has most of the power and the students do more listening. The teaching style is more lecture based. When it comes to Learner-Centered Teaching, there are two perspectives/roles that need to be examined: the student perspective/role and the teacher/role perspective.

The teacher's perspective role It is usually assumed that when the students become the center, the role of the teacher decreases to nothing. However, this is not true. For successful discovery learning, the teacher has to be creative along with understand how to develop lesson plans in which the students can learn from interacting and experiencing. Learner- Centered teaching should not be used as a means of survival or an escape from what is considered traditional teaching, but rather a commitment to develop an experience to remember. From a constructivist's perspective, the teacher has to be creative so that he/she can invent lesson plans that will further the students' conceptual understanding (Reinhardt, 2000, p.54). The teacher must let the students answer their own questions and challenge each student. Reinhart

shares the following statement, When I was in front of the class demonstrating and explaining, I was learning a great deal, but many of my students were not! Eventually, I concluded that if my students were to ever really learn mathematics, they would have to do the explaining, and I, the

Methods : my definition of a good teacher has since changed from ‘one who explains things so well that students understand’ to ‘one who gets students to explain things so well that they can be understood’(Reinhardt, 2000, p.54). It is important to note that the realization this teacher made is vital to student learning. This becomes its own assessment: can a student explain the material? , can a student answer another student’s question? Is the teacher seeing the students interact in a way that expresses the students understand of what is going on? So, from the teacher perspective in a Learner-Centered classroom the teacher is not the dominant figure. In fact there is a balance of power between the students and the teacher. Some people have difficulty accepting this balance of power. Many who object the ideas of radical pedagogy do so on the ground that if faculty relinquish control, they abrogate legitimate instructional responsibility. Students, they say, end up running the class and teaching themselves, leaving the teacher no viable role in the educational process. It is true that this educational ultimately dispenses with the teacher. The goal is to equip the students with learning skills so sophisticated that they can teach themselves (Weimer, 2002, pg. 29).

Results : It is true that this could cause chaos, but this is where the teacher would need to have enforced classroom policies; basically classroom management becomes another huge responsibility for the teacher. The teacher must create an environment that allows such activities and experiences to take place. The teacher plays a major role in the class room, even when the approach is studentcentered.

Kilpatrick, Swafford, and Findell agree on the following role of a teacher, Effective teachers have high expectations for their students, motivate

them to value learning activities, can interact with students with different abilities and backgrounds, and can establish communities of learners. A teacher's expectations about students and the mathematics they are able to learn can powerfully influence the tasks the teacher poses for the students, the questions they are asked, the time they have to respond, and the encouragement they are given—in other words, their opportunities and motivation for learning. (Kilpatrick, 2006, pg. 9)

The role of a teacher is far more than lesson planning. Another role is they must determine the level of thinking required which is known as cognitive demand. This will be further explained in the student perspective portion. However, it is important to note that this is another role the teacher must take on to fully commit to partake in discovery learning. Every part of a task must be analyzed to incorporate cognitive demand. Student's perspective/role

Discussion : The generation of children today has grown up with technology. Nothing against technology, but it makes things easier. Along with that, I have seen many children that are handed everything they need/want. This has become a problem in the classroom. The teacher hands out a list of steps, the students follow them, and then they circle their “answer”. Challenge is a necessary part of the classroom, and sometimes there tends to be a lack of it. Listen while the teacher lectures, do your homework, and memorize for the test. In a Learner-Centered classroom, the student is given responsibility. They get the chance to explore and control what they learn. In a couple of case studies, students were pleased with the way a Learner-Centered model affected the classroom. Meece states, “Students reported more positive forms of motivation and greater academic engagement when they perceived their teachers were using Learner-Centered practices that involve caring, establishing higher order thinking, honoring students’ voices, and adapting instruction to individual needs.”(Meese, 2002, p.110). When viewing the student's role in Learner-Centered teaching, we begin to introduce different levels of cognitive demand.

According to Stein (2000), cognitive demand is the level of thinking it takes students to successfully engage in a task. He continues on by explaining what these difference types of cognitive demand are. Stein states, “Not all mathematical tasks provide the same opportunity for student learning” (Stein, 2000, p.17) Stein outlines four different types of cognitive demand:

- Memorization – Students with perform multiple different problems anywhere from 10-30 times. These problems are extremely similar. This goes along with the drill method hich is where a teacher “drills” facts into their students’ mind.

- Procedures without Connections – This is on the same level as memorization. (lower level of cognitive demand). The students are asked a question where they can repeat steps that were previously given to them. They do not make connections, but rather perform certain steps without much understanding.

- Procedures with Connections – This is where we see higher level of cognitive demand.

Conclusion: students are aware of what is going on, and they are able to make connections to the bigger picture. There conceptual understanding deepens here. We also see that they are able to understand various representations.

- Doing Mathematics. This requires fewer problems with more exploration. Students develop the procedures, and are not immediately given the steps. We can develop a decent understanding of what this looks like in a classroom by what VandeWalle has to say, “Doing Mathematics means generating strategies for solving problems, applying those approaches, seeing if the lead to solutions, and checking to see if your answers make sense.”(p.13). There are a few important expectations to remember o Persistence, effort, concentration

- Collaboration between students
- Listening to other students

- Learning from mistakes
- Making connections

These are all parts of Doing Mathematics that the students will be experiencing (VandeWalle, 2013). Each task has its own purpose. It could be to engage in reasoning or enforce a procedure. On the contrary, the science behind this matter shows a different side. Clarke (2006) states, We have known at least since Peterson and Peterson (1959) that almost all information stored in working memory and not rehearsed is lost within 30 sec and have known at least since Miller (1956) that the capacity of working memory is limited to only a very small number of elements (p.76). It seems that as humans we need some type of memorization to reinforce the knowledge, but Stein sees memorization as lower cognitive demand. Throughout my study and personal research, Stein's cognitive demand levels will be referenced.

Learning-Centered Study- Middle School Edition

There was a previous study (Meese, 2002) that focused on Middle School students and teachers. It involved 2,200 students and 109 teachers. The purpose of the study was to see the benefit Learner-Centered teaching can have in the classroom. The students and teachers had to complete surveys that allowed them to assess these practices. The study included rating scales where the academic success, level of cognitive demand, classroom performance, and

Demographics demographics could be examined. Meese determined three different goals that were based on prior research. The way Meese (2002) assessed the results were by the following categories:

“Mastery goals, a desire to improve ability; Performance goal, a desire to demonstrate high ability and performances; and work avoidance, a desire to complete a task with minimum effort” (p.112). After analyzing the student and teacher surveys, they were able to come to a conclusion.

Conclusion: in conclusion, this research experienced proved to be beneficial to my future experience as a teacher. The results of my research, in

fact, demonstrate that when the students are the center of the classroom and have a chance to participate in an experience, they will have a deeper conceptual understanding of the concepts. When students have this deeper understanding it helps with their future. Students leave each class with a lasting impression which allows them to continue to recall what they have learned. It also allows the students to have a firm foundation, and allows them to make connections to other mathematical concepts. It was evident by the data I collected that the students responded better to the activity in which they were the center. If students prefer this type of learning, it is important that we strive to enact this type of learning into our classrooms especially since the assessments show a deeper conceptual understanding. Benjamin Franklin says this quite well. He stated, "Tell Me, I forget, Teach Me and I may remember, Involve me and I learn". Applying these results to a classroom influences students in a positive manner. After all of my research, I am able to conclude that when students involve themselves in a lesson; they not only take the responsibility for their learning, but they leave each day with a lasting impression.

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