

Recognizing Differences Between Learners
and the Importance of Prerequisites, Pre-testing and
Knowing your Students Before they Enter the Class.

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Introduction

Before any type of curriculum can be constructed, there are many important factors that must first be taken into consideration. If these issues are not addressed initially, then the learning experience can be greatly lessened. In the documentation to follow, the importance of assessing students before they even step foot in class will be looked at in depth.

The process of learning and acquiring knowledge is a dynamic process. Each student that comes into to a classroom is a different past, present and future. This notion of difference among people is not a new revelation, but rather an idea that slips the minds of some instructors in education today. Because people are different, they learn differently and they are motivated by different techniques or teaching styles. If this simple idea is not taken into consideration when designing instruction, at any level, then the success of the students will be hindered. It is important that an instructor know his/her students before they even walk into their classroom. It is important that the instructor takes into account for the differences in learning styles and personal information that may be provided that could lead to a motivational aid.

An instructor, who does not know where students are at, as far as academic background, is put in an uncompromising situation. It is difficult to accommodate a class when the class includes students who are on opposite sides of the spectrum. Too much time can be spent catching the slower learners up to speed, which in turn, may cause the advanced learners to lose interest and fall behind. On the other hand, if an instructor forges on ahead anyway, they can lose the slower learners permanently. It is important for an instructor to know his/her students before

the class begins so accommodations can be made to strengthen the learning atmosphere or move that student to a level of instruction that is more suited to their needs.

Sometimes it is necessary for some classes to have stipulations or prerequisites that must be completed upon entering the class. There are many advantages to requiring prerequisites or pre-testing to check entry behaviors. This prior assessment of a student's personality, behaviors and/or related or unrelated experience can benefit not only the instructor, but the learner as well.

The information included in this document deals with experiments and the opinions of expert educators and instructional developers. Also included are theories and hypotheses from prominent researchers and educators to the subject of learner differences and taking these differences into mind when creating a curriculum. These ideas are also linked to the importance of knowing student's educational and personal backgrounds that can be obtained through pre-testing. Also, through the use of prerequisite education, the instructor will know that there students have had to have covered a certain amount of material that leads up to what the instructor will be dealing with in the current class or training session.

Within the material collected and reviewed to construct this paper, all of the information was selected because of its relevance to the topic and the expert opinions and data they include. The material is appropriate, not only for the purpose of this paper, but for research and development in the design and layout of the class project. Understanding differences between people's abilities to learn and an instructor knowing the academic abilities and personal attributes of those students is a step in the Instructional Development process that must be stressed.

The following is a list of research questions in which helps to clarify or to demonstrate the kinds of questions this document should answer through the research of existing documents, journals, etc.

- Why is it important to understand the significance of learner differences?
- Why are entry behaviors important?
- How can prior knowledge of a student's academic and personal background be used to motivate that student?
- What are the advantages to pre-testing students?

Methodology

The information, or sources, were obtained through various search engines and databases utilizing the Internet. In the quest for information, magazines, journals and books were searched for data that was relevant to topic at hand. Many educational databases were used in the search, such as Eric or by utilizing the subject search under the topic "education", in the Rod Library home page.

The information that was desired was data that could either be linked to students in a high school, college or business training atmosphere. Since learning techniques, motivations and learner differences are somewhat the same in all educational settings; information on those aspects was taken to help strengthen the idea of "knowing the students." When searching for information pertaining to pre-testing and prerequisite courses or data, articles or books were chosen that dealt more along the lines of the college level or business training level.

Once the articles and books were selected, the information in each was cut out by careful consideration and its relevance to the topic.

Analysis and Discussion

Being different than everyone else on the planet is a gift. How plain would a person's day be without a variety of characters in his/her life? There would be nothing to challenge or push that person. Being different is an attribute that is very important, especially in education. Each

learner brings a different playing hand to the table. For some instructors, this is a problem. But for most, it is seen as a challenge or a way to facilitate learning to a higher degree by pointing out differences and sharing with each other different experiences or knowledge.

From the article, “No Two Are Quite Alike”, by Theodore R.Sizer, the first line of his article states, “We cannot teach students well if we do not know them well. At its heart, personalized learning requires profound shifts in our thinking about education and learning.” (Sizer 1999) To truly develop a curriculum that is complete and solid, the foundation needs to be with understanding the differences in the students and knowing that they are different and they learn differently. What may come easily to one person, but harder to another, is part of life. But it is up to the instructor to see this problem and accommodate for it. Not each student knows the same material, and not all students are going in the same place professionally or just in general. Education needs to be more personalized; as Sizer points out. The ultimate advantage to education is its flexibility. Educational institutions, from high school on up, offer courses and programs that allow students to chose their path or direction in some way. (Sizer 1999) Within each course, there must be room to accommodate for student’s individualisms and these must be taken in account to educate and motivate them. Whether it is knowing general information about academic background and personal information of the group as a whole or knowing each individually, this must be used in the content of the curriculum.

As discussed by Howard Gardner’s, learners have developed different “styles” of learning or different “intelligence’s.” These different learning “styles” or “intelligence’s” include: linguistic intelligence, musical intelligence, mathematical intelligence, logical intelligence, spatial intelligence, bodily intelligence, and intra- and interpersonal intelligence. (as cited in Pratt, 1994) The difficult task for an educator is finding a way to appeal to, or motivate, each student no

matter what “style” of learner they are or what type of “intelligence” they may have. But it is a necessity, according to David Pratt in his book, “Curriculum Planning: A Handbook for Professionals.” According to research of E. Caffererty, students learn best when their specific “learning” style matches the teachers teaching “style.” (as cited in Pratt, 1994) A teacher that only teaches to one “style” of learner will ultimately put students at alternate “styles” of learning to a disadvantage. It is very important that the variety is recognized and utilized. (Pratt 1994)

Each student is different, we know that much. Some differences are due to the way they were brought through their learning system and some differences are due to heredity. No matter what the differences are, these differences can have a heavy impact on how the course or curricula is designed. An intelligent instructor will capitalize on bringing in pieces of these differences to the design. In some cases, an instructional designer can only properly design a course in which he/she knows the different characteristics of students in the class they are designing for. (Smaldino, 1999)

So far, this document has covered the importance of the notion of recognizing learner differences and utilizing and capitalizing on these differences by including in the curriculum methods to include and motivate all “styles” of learners. So now that this importance is understood, how does an instructor go about finding information about their students and how is this significant? The rest of the document will focus on prerequisites, pre-testing, prescreening and its significance.

Once again, the work of David Pratt seems to be very useful in discussing the importance of prerequisites and pre-testing. Discussing the characteristics of students is, for all measurable purposes, used purely to describe that particular student. Prerequisites and pre-testing set stipulations for the students. Rather they set marks that students must attain before entering a

specific class or give pertinent information to the instructor on what skills need to be stress during instruction. The prerequisites are used to make sure that students entering a particular class have the abilities to tackle the class workload. (Pratt, 1994) According to Rabinowitz and Schubert, new learning needs to be similar as possible to what the learner already knows so that links can be made between new and already known information. But the new learning needs to be different enough so the learner must contemplate new ideas come to new realizations. (as cited in Pratt, 1994)

Another supporter of prerequisite learning or of prescreening learners before they come to class is Susan Boyd in her article entitled, "Making Computer Training Stick." In Boyd's article, she deals mainly with technology training in a professional setting. According to Boyd, by prescreening, or surveying students before they come into a class, an instructor, and the student, can be ensured that the student is in the correct class and has met the prerequisites. This also allows for the instructor to tailor the lecture or course content to accommodate certain students. (Boyd, 1997)

To intervene with my own opinion, the reason I chose the topic for this paper is because of my experiences while participating as a graduate assistant at ITS-Educational Technology in the training department. I would like to, in some manor, implement a method of pre-testing students or establishing a set of prerequisites for each before they enter our workshops. Many of the students in our workshops end up in a class that is either too advanced or not advanced enough for the skills that they bring into the class. As an instructor, its is difficult to find a pace slow enough to accommodate for students who should be in a different class, of lower level, and fast enough, or advanced enough, for those who may already have covered the materials in the workshop. It is very frustrating for me to be instructing an advanced level workshop and then

have a student who doesn't even know how to use a mouse. It is difficult to challenge one group and completely go over the head of the other. I think students should be assessed before entering anyone of our workshops, then we would place them in a workshop that is appropriate for them.

To continue in a technology training setting, Boyd talks about the importance of assessing a group of employees, in a business environment, and then placing them in the correct training sessions to sharpen skills or to give them a new set of ideas and tools. Training is expensive, so it is imperative that people be placed in the correct workshops to not only save money but time as well. One does not want to spend the time and money to show someone skills that that person already knows. And on the other hand, one does not want to spend the time or money on training that students are just not ready for and will retain little, if any, information they are presented. (Boyd, 1997)

Boyd continues in her article to talk about the importance of making sure that not only the learner, but the managers or people who are in charge know what will be expected of the students. Boyd points out also the importance of meeting with prospective students before the training sessions to get an understanding of what skills they may already have. (Boyd 97) Information can also be collected through registration forms or surveys that can reveal entry behaviors and skills. These pretests can be used to alter curriculum and to benefit the largest possible percentage of the class.

Boyd also mentions the use of "learner contracts". By this, Boyd means that the instructor should, after reviewing what will be covered in the workshop or class with each student, ask them to point out a goal that that person would like to accomplish while in the workshop. (Boyd 97) This is another way to shape a class around the needs of the students and to see where the students are at skill wise.

It is understood that the material that Boyd deals with is in a more professional training atmosphere, but they are ideas that could be applied at any level of education and should be. But in a class of 200 to 300 students, instructors do not have time to “get to know” every student in the class. But it is still important to be able to relate with different groups of people in the class and be able to know what the level of skill, or academic background, is for the class, as a whole, to make sure the right people are in the class. By pre-testing, even 200 or 300 students, an instructor is greatly improving the results of the cumulative learning experience of the students.

Not every course requires prerequisites upon entering, but the use of pre-testing can, once again, be very beneficial. Pratt lists seven advantages to the use of pre-tests. The first advantage Pratt lists is the ability of pretests to identify students who lack prerequisite skills to enter the class. (Pratt, 1994) Once these skill deficiencies are identified, the instructor and the learner can work out a course of action that may include working outside the class.

The next idea Pratt lends to pretests is that they identify students who may be “at risk.” Knowing the emotional state of a student can greatly help in the teacher student relationship. (Pratt, 1994) It would be at a teacher’s advantage to know that one of his/her students, for example, is going through a state of depression. The proper steps could be taken to accommodate that person.

The third advantage to a pre-test is to locate students who don’t need to be in that particular class. (Pratt, 1994) There is no point for a student to be in a class when they have already covered the material and thoroughly understand it.

Pre-tests can also serve as “baseline for achievement” in the class. This is a way to monitor the growth of a student as he/she goes through the program. (Pratt, 1994)

The fifth advantage to pre-testing is their ability to describe the student in many different areas. From what prior knowledge the student has on the class subject to family background, pretests can be an excellent source of information for instructors to use to design instruction. “It helps the teacher come to know the pupils and their interests and to use this knowledge in the classroom.” (Pratt, 1994)

Another advantage to pre-testing is that it provides a method to offset stereotypes and assumptions about students. (Pratt, 1994) For example, an educator could try to make football references to a male student because the instructor believes all young males like football. This could turn that student off if that student does not like football.

The last advantage Pratt lists is that pre-tests allow the instructor to organize instruction far in advance of the class. (Pratt, 1994)

Conclusions and Recommendations

Recognizing differences and knowing details about a student before that student enters a classroom; effects not only the path of the student, but the path of the instructor as well. This “pre-class” work enhances the quality of education and provides an understanding of what is to be expected from the learner and from the teacher. Many different factors must be considered by an educator to ensure academic success within the class he/she is teaching. It is imperative that a student’s aptitude, abilities and personality be known to the instructor so that certain changes can be made within the curriculum to accommodate the differences between students. By not pre-planning, some students will be left out of the academic loop and fall farther behind as a result. An educator must take into account what the learner already knows and apply it to his/her curriculum. A quote from David Ausubel sums up this situation very clearly: “The most

important single factor influencing learning is what the learner already knows. Ascertain this and teach him accordingly.” (as cited in Pratt, 1994)

Teaching is a game of percentages. What motivates one group of students to learn may deter another. This is why it is so important to have at least a basic knowledge of who your audience is going to be. But to ensure success, the more information known, the better. Requiring prerequisites and pre-testing is an excellent way to get an idea of your students and to make sure they are in the right class to begin with!

I can't recommend the importance of instructors doing the work before the class begins enough. Pre-testing students, recognizing differences and requiring them to acquire a certain amount of knowledge before proceeding to the next level are all ways of strengthening a curriculum, an instructor and most importantly, the student.

References

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(class notes)

(S. Smaldino, class lecture and course packet, Fall 1999)