Theory that Informs Differentiation

By helping students discover and pursue their interests and passions, we can maximize their engagement with learning, their productivity, and their individual talents.

Particular Instructional materials, curriculum, staff attitudes and beliefs, policies, teaching styles, assessment procedures, and other facets of schools may be more advantageous to members of some gender or cultural groups and disadvantageous to others. As a result teachers may misalign learning opportunities.

Student achievement is not likely to improve when teachers ask students to practice what they already know. Student achievement is also likely to be negatively impacted when teachers ask students to complete tasks that cause the students ongoing frustration.

Student achievement is not likely to improve when teachers ask students to practice what they already know. Student achievement is likely to be negatively impacted when teachers ask students to complete tasks that cause the students ongoing frustration.

When students encounter tasks at moderate levels of difficulty they are more likely to sustain their efforts to learn even in the face of difficulty than when tasks are too difficult or under-challenging.

When interest is tapped, learning is more likely to be rewarding and students are more likely to become autonomous learners.

Instruction must always be in advance of a child’s current level of mastery for growth to occur.

By helping students discover and pursue their passions, we can maximize their engagement with learning, their productivity, and their individual talents. High levels of intrinsic interest
set up conditions for creative production. One approach is to allow students to choose their own topics for projects.

Theory of flow: a state of total absorption that comes from being lost in an activity that is so satisfying that the participant loses track of time, weariness, and everything else but the activity itself. Flow requires that the participant be interested in the activity in which he or she is engaged.

Conditions for flow are clarity about purposes and the participant’s sense that the task is within his or her capacity to act. Flow encourages the participant to seek out new challenges to grow. Interests foster skills needed to develop talent. Flow is the strongest predictor of student engagement and of how far he or she progresses in a content area.

For teenagers to become committed to developing their talents there must be a match between the complexity of tasks developed by teachers for students and the individual skill level of the students. Students whose skills are under challenged demonstrate less interest in and involvement in learning activities and a lessening of concentration. Students, whose skills are inadequate for a task, demonstrate low achievement and a lowering sense of self-worth. Teachers effective in developing talent attend to student readiness levels. A second key to talent development is student interest in the task.

Instructional materials, curriculum, staff attitudes and beliefs, policies, teaching styles, assessment procedures, and other facets of schools may be more advantageous to members of some economic or cultural groups and disadvantageous to others. As a result teachers may misalign learning opportunities if they use the same materials and procedures with all students. This can undermine the academic success of students for whom the materials and procedures are not a match.

There is a relationship between student achievement and a teacher’s ability to diagnose the student’s skill level and prescribe appropriate tasks. When students work at a high success rate, they feel better about themselves and the subject they are studying, and they learn more.

Human intelligence manifests itself in many spheres. Teaching should attend to an individual’s intelligence preferences to enhance achievement.

Cambridge, MA: Harvard University.
A person’s gender may influence how he or she looks at and interacts with the world. When a person is socialized to act one way, and the classroom promotes a different way of interacting, a mismatch occurs and learning may be hampered.

While learning preferences vary over time and place, they are probably biologically based to some degree. Matching learning style preferences and conditions of learning is one way to improve learning.

Student motivation can be maintained over time if adults maintain environments where learners feel free to exchange ideas and share interests.

Brain researchers explain that learning occurs when the learner experiences neither boredom nor anxiety—in other words, is neither over- or under-challenged.

More effective learning takes place when the amount of task structure provided by a teacher matches a student’s level of development.

Effective teachers in contemporary classrooms will have to learn to develop classroom routines that attend to, rather than ignore, learner variance.

Brain researchers explain that learning occurs when the learner experiences neither boredom nor anxiety and is neither over- or under-challenged.

The best learning environments offer a large variety of choices, allowing students the opportunity to discover their interests and talents.

Curriculum and instruction that matches learning style and intelligence preference of students from diverse cultures has positive impacts on learner outcomes.

A person’s culture shapes all aspects of a person’s life. When a person is socialized to act one way, and the classroom promotes a different way of interacting, a mismatch occurs and learning may be hampered.

Equality of opportunity only happens when students receive instruction that is suited to their needs. This enables them to maximize their growth.

The appropriate question in today’s diverse classroom is not “how can I motivate students?” Rather, it is “What motivates this particular student and how do I design work that is responsive to these motivations?”

Students should work at a level of “moderate challenge” for optimal learning to occur.

Human intelligence manifests itself in many spheres. Teaching should attend to an individual’s intelligence preferences.

Gender may influence how individuals look at and interact with the world. When a person is socialized to act one way, and the classroom promotes a different way of interacting, a mismatch occurs and learning may be hampered.

One of Vygotsky’s seminal works that discusses the idea of the Zone of Proximal Development, in which, for optimal learning to occur, students must work at a level that is just beyond the level at which they can work independently. Students need peer or adult support to succeed at the next level of challenge.

One of Vygotsky’s seminal works that discusses the idea of the Zone of Proximal Development, in which, for optimal learning to occur, students must work at a level that is just beyond that which they can do independently. It is the responsibility of the teacher to create learning situations aligned with an individual’s zone of proximal development and to provide support for success at that new level of challenge.

Students should work at a level of “moderate challenge” for optimal learning to occur.
Research that Supports Differentiation


Campbell, L. & Campbell, B. (1999). *Multiple intelligences and student achievement: Success stories from six schools*. Alexandria, VA: Association for Supervision and Curriculum Development. A multiple intelligence focus in instruction leads to increased test scores. Students from varied cultural and economic groups flourish academically in such settings. Student and staff attitudes improve as well.


Ferrier, Ann M. (2007). *The Effects of Differentiated Instruction on Academic Achievement in a Second-Grade Science Classroom*. Unpublished doctoral dissertation. Walden University. The purpose of this quasi-experimental study was to determine if utilizing differentiated instructional strategies had an impact on student achievement. Analysis of Covariance (ANCOVA) was used to determine the impact instruction using differentiated strategies had on the academic achievement of second-grade students in life science and in physical science. Students in the differentiated instructional classes were found to score significantly greater than their traditionally instructed peers.

Students in multi-grade classrooms (where teachers consistently address student readiness) fare better than students in classrooms with a more single-size approach to learning on measures on study habits, social interaction, cooperation, attitude toward schools, and general mental health.


Five high-achieving urban African American first graders with weak writing profiles had differentiated writing instruction in their regular classroom focused on two strategies, self-counting and synonym lists. The differentiation designed to improve their writing performance and enhance prospects for future academic success. All five students demonstrated improved writing outcomes in terms of both writing output and use of a broader range of words.


Learning profile adds to our understanding of students’ performance and should be taken into account in classrooms in terms of both instruction and assessment. Students taught with a learning profile match outperform those taught in a more traditional manner.


When students are interested in what they study, there is a positive impact on both short-term and long-term learning.


This study presents the results of a mixed methodology study that investigated the effects of facilitated teacher support groups and differentiated instruction on student achievement at two urban, Title I middle schools. The researcher developed and field-tested the Differentiated Instruction: Fidelity Implementation Tool (DI: FIT) during the first year. At each of the two school sites, 13 to 15 teachers were selected to participate in the treatment group and 13 to 14 teachers in the control group. The effects of teacher use of differentiated instruction with fidelity on the reading and mathematics achievement scores of approximately 906 students were assessed using ANOVA procedures and effect sizes were calculated. Both the reading and mathematics achievement change scores and the difference in the teacher fidelity observation scores by treatment group were statistically significant. A clear relationship also existed between the teachers’ mean implementation fidelity scores and the student achievement scores.


Students in small within-class learning groups achieve significantly more than students not learning in small groups. They also have more positive attitudes about learning and score stronger on self-concept measures. Student gains are greatest when instructional materials
are varied by need for different instructional groups rather than using the same materials for all groups.


First grade children in Colombia whose reading instruction utilized the model of differentiating content, process, and product in response to student readiness, interest, and learning profile over a four month period had fewer oral reading errors, higher comprehension scores, fewer students scoring below grade level, and more students scoring above grade level than control students.

Rasmussen, F. (2006). *Differentiated instruction as a means for improving achievement as measured by the American College Testing (ACT)*. A dissertation submitted to the Loyola University of Chicago School of Education.

Students in a Chicago high school receiving more instruction from a differentiated instructional methodology outperformed students receiving less instruction from a differentiated methodology on ACT English, ACT Mathematics, ACT Reading, and ACT Composite.


When students are interested in what they study, there is an impact on both short-term and long-term learning.


When students are matched to instruction suited to their learning preferences, they achieve significantly better than comparable students whose instruction is not matched to their learning preferences.


Students who learned and expressed learning in preferred learning modes outperformed students who did not have that opportunity.


A summary of research shows that effective teachers in contemporary classrooms develop classroom routines that attend to rather than ignore learner variance.


Addressing a student’s learning style through flexible teaching to address learning style results in improved achievement and attitude gains in students from a wide range of cultural groups.

Tieso, C. (2002). *The effects of grouping and curricular practices on intermediate students’
Achievement gains are found across economic and achievement levels through pre/post-test results for students in effectively differentiated classrooms.

Tomlinson, C. A., C. Callahan, et al. (1997). “Challenging expectations: Case studies of high-potential, culturally diverse young children.” Gifted Child Quarterly 41(2), 5-17. Teachers who develop primary grade classrooms with a multiple-intelligence focus demonstrate more flexibility in teaching and more student-centered instruction. These teachers developed more positive mindsets about students from low income and/or minority backgrounds.

Tomlinson, C., Brimijoin, K., & Narvaez, L (2008). The differentiated school: Making revolutionary changes in teaching and learning. Alexandria, VA: Association for Supervision and Curriculum Development. Multi-year studies in an elementary school and a high school indicate positive and sustained achievement gains for students in all segments of the achievement spectrum and in a range of subject areas as a result of differentiated instruction. In the high school, the student dropout rate has also fallen sharply and student participation in Advanced Placement courses has risen by almost half, with AP exam scores holding steady or rising despite the increased enrollment. In both sites, a school-wide emphasis on differentiation has continued for at least seven years and achievement gains have continued over that time span.