The Primary Motivational Issue in Gifted Education Is...
Among teachers of gifted students, …

- What is the predominant (most common) motivating style?

- What motivating style is most appropriate?

- How can teachers work their way toward developing this appropriate motivating style?
Concerning gifted students’ motivation…

• What de-motivates?
• Why do gifted students lose their motivation?

• What causes under-achievement (motivationally speaking)?

• What causes flow?

• How can teachers motivate students during very challenging lessons?
Some Questions about Cultural Context

• How can Western concepts such as autonomy and autonomy support be actualized in an Eastern society, such as Korea?, such as Singapore?

• Are these concepts really relevant or helpful (or trustworthy) in Korea?, in Singapore?
## Background Perspective on Gifted Students’ Motivation
### General Motivational Status of Gifted Students in Public School

<table>
<thead>
<tr>
<th>Above Average</th>
<th>Below Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Competence</td>
<td>• Autonomy</td>
</tr>
<tr>
<td>• Behavioral Engagement</td>
<td>• Flow</td>
</tr>
<tr>
<td>• Emotional Engagement</td>
<td></td>
</tr>
</tbody>
</table>
Motivational Vulnerabilities

- Entity Thinking
- Challenge Avoidance
- Fragile Perfectionism
- Boredom

Perceptions of the Learning Climate

- Teaching Style Seen as Intrusive
- Class work Seen as Repetitive, Unchallenging
What Students in Gifted Education too Often Say…

• “I’m not challenged enough.”
• “Teachers don’t know how to challenge me.”
• “I don’t really enjoy challenge for its own sake.”
• “I’m afraid of challenge.”
• How can I provide highly-engaging challenges to my gifted students?
Prerequisite:

Provide an error tolerant environment

Provide an autonomy-supportive environment

Provide a mastery goal climate

We’ll talk a lot about autonomy-support and a mastery goal climate, so let me take a moment here to explain error tolerance.
Error Tolerance

A learning climate in which students feel safe to make mistakes, errors, to temporarily fail—failure tolerance, even failure *prizing*.

- In this class, the goal is not to get a quick, fast answer—that just means the task is too easy; you aren’t challenging yourself.

- I expect you to make mistakes, I expect you to have to work hard, I expect you to be confused, I expect you to run into obstacles and to run into dead-ends. If you are not, we have a problem.

- I want you to constantly revise your work. I want improvement. I want to see effort. I want to see you changing your strategies. I’m more interested in your final product than your first product.

- I want you to risk failure. Risk making mistakes and errors.

- Here is what an error means: *I’ve got an challenge on my hands!*
State the Challenge

• “Here is a challenge, let’s see if you solve it.”

• “Tell me what excellence is, and see if you can produce it.”

• “Here is what one person did in the past, can you come up with anything better?”

• “What would you like to do? What would you like to accomplish?”
Focus on Improvement, Progress

- Challenge is not inherently motivating by itself.

*Sat\textit{isfaction} comes in progress, improvement, a job well done, finding a solution, and in gaining mastery where it didn’t exist before.*

So, as the student paints, writes, plays music, learns biology…

- Focus on effort $\rightarrow$ improvement, making progress
- Focus on strategy $\rightarrow$ improvement, making progress
Nurture Self-Direction

• Satisfaction comes in progress, improvement, a job well done, finding a solution, gaining mastery only when it is earned authentically, objectively (through self-direction).

• So, as the student paints, writes, plays music, learns biology…

“You decide the goal, you decide the plan, you decide the strategy, you decide when to start, you decide when to change your course of action, you decide when to take a break, you decide…”

• Teacher’s Motivating Style: Autonomy Support*
  Provide a lot of support for students’ autonomous strivings so they can make progress and improve (within a context of self-direction).
Help Students Develop the Capacity to Enjoy (a) a task and (b) a challenge for its own sake.

- As students work on their projects, have a group discussion (whole-class discussion is fine; small interest-based group discussion is better).
- “Why do people enjoy science?”
- “Why do people enjoy playing music?”
- “Why do people feel so much satisfaction from a challenge—or get bored with under-challenge?”
Keep Highly Engaged Self-Direction Going

- Closely monitor students’ expressions of behavioral engagement, emotional engagement, cognitive engagement, and agentic engagement and support that engagement constantly—forget the outcome, the end product, and support the engagement.
The Anatomy of an Optimal Challenge

6 Steps

*Step 1*: Provide an Error Tolerant Learning Climate

*Step 2*: State the Challenge

*Step 3*: Focus on Improvement, Progress

*Step 4*: Nurture Self-Direction

*Step 5*: Help Students Develop the Capacity to Enjoy a Task and to Enjoy a Challenge for Its Own Sake

*Step 6*: Keep Highly-Engaged Self-Direction Going
This is a talk about student motivation and how teachers can nurture and support students’ motivation.
Educators care so deeply about motivation because it predicts students’ positive functioning.
This is a complicated subject, because student motivation is so complex and multifaceted, and because every teacher seems to have his or her own style and way of motivating students.
This is a complicated subject, because student motivation is so complex and multifaceted, and because every teacher seems to have his or her own style and way of motivating students.

Seem to be as many different motivating styles as there are teachers.
And, often, teachers have different student outcomes in mind, or at least teachers prioritize these different outcomes differently.
What All Classrooms Have in Common

There are many different variables at work, but we all have one crucial variable in common that helps make sense of all the diversity and complexity.
Student Engagement is a *common currency* we all share in our classes.

- Teacher’s Motivating Style
- Students’ High-Quality Motivation
- Students’ High-Quality Engagement
- Students’ Positive Functioning
Student Engagement

• What it is.

• Why it is important.

• Its relation to student motivation and to student outcomes.

• How to nurture it.
Engagement

• Extent of students’ active involvement in a learning activity.
Engagement During a Learning Activity

**Behavioral Engagement**
- On-Task Attention
- Effort
- Persistence (Effort over Time)

**Emotional Engagement**
- Presence of Energizing Emotion
  - Interest, Curiosity, Enthusiasm
- Absence of Deactivating Emotion
  - Anger, distress, boredom

**Cognitive Engagement**
- Sophisticated Learning Strategies
- Self-Regulation
- Critical Thinking

**Agentic Engagement**
- Constructive contribution into the flow of instruction
- Personalizing What Is to Be Learned
Engagement
During a Learning Activity

Behavioral Engagement

• On-Task Attention
• Effort
• Persistence
  (Effort over Time)

“I work hard in this class.”
Engagement During a Learning Activity

**Behavioral Engagement**
- On-Task Attention
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- Persistence (Effort over Time)

**Emotional Engagement**
- Presence of Energizing Emotion
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“Class is fun—I enjoy it.”
Engagement During a Learning Activity

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- Self-Regulation
- Critical Thinking

“When reading, I try to connect the things I am reading about with what I already know.”
Engagement During a Learning Activity

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- Effort
- Persistence (Effort over Time)

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- Self-Regulation
- Critical Thinking

**Agentic Engagement**
- Constructive contribution into the flow of instruction
- Personalizing What Is to Be Learned

“I ask questions to satisfy my curiosity.”
Agentic Engagement

Students’ intentional, proactive, and constructive contribution into the flow of instruction they receive (versus merely reacting to instruction as a given).

1. I let my teacher know what I am interested in.
2. I narrow my attention to the most interesting parts of what we are learning.
3. I try to make whatever we are learning as relevant to my life as possible.
4. When I need something, I’ll ask the teacher for it instead of just suffering quietly.
5. I ask questions so that I can learn new things.
6. I ask questions to satisfy my curiosity.
1. Engagement makes learning and skill development possible.

2.

3.

4.
Engagement: Why It's Important
(Engagement during Learning Activities, in Particular)

1. Engagement makes learning and skill development possible.
2. Engagement predicts school functioning.

Positive Student Outcomes
- Learning
- Performance
- Achievement
- Drop out
- Talent & Skill Development
Engagement: Why It's Important
(Engagement during Learning Activities, in Particular)

1. Engagement makes learning and skill development possible.
2. Engagement predicts school functioning. And, it does so *better* than does motivation.

**Positive Student Outcomes**
- Learning
- Performance
- Achievement
- Drop out
- Talent & Skill Development

**Good Model**
- Motivation → Positive Student Outcomes

**Better Model**
- Motivation → Student Engagement → Positive Student Outcomes
Why Behavioral Engagement Is Not Enough: The Unmediated Motivation-to-Achievement Relation

\[
X^2 (2) = 0.34, \text{ ns. } RMR = .01, \text{ RMSEA} = .00, \text{ CFI} = 1.00
\]

Motivation-to-Achievement Relation, Mediated by Engagement

Note. Direct path from motivation to achievement is $\beta = -.14$, ns. $X^2 (326) = 917.13, p < .01$. $RMR = .089$, $RMSEA = .070$, $CFI = .91$.

Engagement: Why It’s Important

The Functions of Engagement

1. Engagement makes learning and skill development possible.

2. Engagement predicts school functioning.

3. Engagement is malleable.
Engagement: Why Its Important
The Functions of Engagement

1. Engagement makes learning and skill development possible.
2. Engagement predicts school functioning.
3. Engagement is malleable.

Engagement can change on a dime (quickly).

- Not so much for student motivation.
- Not so much for student achievement.
- Not so much for student outcomes in general.
Engagement: Why Its Important
The Functions of Engagement

1. Engagement makes learning and skill development possible.
2. Engagement predicts school functioning.
3. Engagement is malleable.
4. Engagement supplies teachers the moment-to-moment feedback they need to assess how well or how poorly their classroom motivational strategies are working.
Engagement: Why Its Important
The Functions of Engagement

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**Question**
The teacher tries to increase her students’ interest, she does something to increase their interest, how do she know that their interest increased?
Engagement: Why It's Important

The Functions of Engagement

4. Engagement supplies teachers the moment-to-moment feedback they need to assess how well or how poorly their classroom motivational strategies are working.

*Question*

The teacher tries to increase her students’ interest, she does something to increase their interest, how do she know that their interest increased?

*It is very difficult to do; here’s why…*
Teacher Rating Form
Please Rate Each Student in Your Class on the Following 7 Characteristics

Three Aspects of Motivation

Psychological Need Satisfaction
High perceived competence; high perceived relatedness or closeness to others; high perceived autonomy (sense of choice, volition, “wants to”).

Self-Efficacy
High self-confidence in being able to master class-specific challenges; low doubt, low anxiety.

Mastery Goal Orientation
Challenge-seeking form of self-regulation focused on the goals of developing high competence and mastering tasks.

Four Aspects of Engagement

Behavioral Engagement
High on-task attention and concentration; high effort; high persistence, especially on difficult tasks.

Emotional Engagement
Frequent and strong positive emotions (interest, joy, curiosity); infrequent negative emotions (anger, boredom, discouragement).

Cognitive Engagement
Uses sophisticated learning strategies; a planful and strategic learner; monitors, checks, and evaluates work.

Agentic Engagement
Offers suggestions; asks questions; expresses interests, preferences, and likes vs. dislikes.
The Study

• Teacher rates each student on 3 aspects of motivation and 4 aspects of engagement.

• Student complete a questionnaire to self-report these same 3 aspects of motivation and 4 aspects of engagement

• Question: Can teachers accurate rate how motivated and how engaged their students are?
Statistical Analysis

• How accurate are teachers’ ratings of their students’ motivation after controlling for students’ engagement and mid-term achievement?

• How accurate are teachers’ ratings of their students’ engagement after controlling for students’ motivation and mid-term achievement?
Teacher Accuracy in Rating Student Engagement (Left) and Student Motivation (Right)

Partial Correlation

- Behavioral Engagement
- Emotional Engagement
- Cognitive Engagement
- Agentic Engagement
- Psychological Needs
- Self-Efficacy
- Master Goal Orient

Partial Correlation
What Does this Mean?

• Teachers rate their students’ engagement reliably and accurately.

• Teachers rate their students’ motivation unreliably and inaccurately.
What Does this Mean?

- Teachers rate their students’ engagement reliably and accurately. *Because engagement is publically observable.*

- Teachers rate their students’ motivation unreliably and inaccurately. *Because motivation is privately experienced.*
Focus on, Monitor, and Try to Increase Students’ Engagement (not Motivation) during Instruction.
However

- From where does student engagement come?

- Student motivation
The relationship between student motivation and student engagement is a very close one. The correlation is often in the .80 to .90 range.
This means, if you change motivation, then you change engagement in close proportion. So, the recommendation is…
Recommendation

• Work very hard during instruction to support and enhance students’ motivation to learn.

• But, don’t try to monitor changes in student motivation—it’s just too hard and to private an experience. Instead, monitor changes in student engagement.

• So, change motivation; monitor engagement.
  (for evidence that motivation is changing)
Ok, then How Do you Motivate Students?

• This takes us to our third and final topic in today’s talk.
What Is Motivating Style?

• Basically, what teachers say and do toward students to energize and direct (i.e., motivate) their classroom engagement and performance.
Understanding Student Motivation

Students walk into each class with many engagement-fostering motivational resources

Curiosity
Interests, Preferences
Preference of Challenge
Psychological Needs
  • Autonomy
  • Competence
  • Relatedness
Personal Goals
Self-Endorsed Values
What a Perspective-Taking PE Teacher Might Anticipate

Curiosity

Interests, Preferences
Preference of Challenge
Psychological Needs
• Autonomy
• Competence
• Relatedness
Personal Goals
Self-Endorsed Values

I wonder if it hurts to head the ball?

Oh good, today is soccer; soccer is better than jump roping…

I wonder if I could score a goal on a penalty kick—like they do on TV.

Let me try to kick it…

Am I good at it?
Am I improving my skill?

This is a good game to enjoy with my friends.

I want to be athletic, healthy

The whole nation loves soccer—this is something important.
Supporting vs. Neglecting Student Motivation

Curiosity
- Interests, Preferences
- Preference of Challenge
- Psychological Needs
  - Autonomy
  - Competence
  - Relatedness
- Personal Goals
- Self-Endorsed Values

The learning climate students walk into either values and supports their inner motivational resources, or it neglects and even frustrates these inner motivational resources.
Teacher’s Motivating Style and Students’ Motivation

Autonomy-Supportive Style

Identifies, Nurtures, and Supports Students’ Inner Motivational Resources during the Flow of Instruction

Controlling Style

Neglects (Even Frustrates) Students’ Inner Motivational Resources during the Flow of Instruction
**Autonomy Support**
Interpersonal sentiment and behavior teachers provide during instruction to identify and nurture students’ inner motivational resources.

**Enabling Conditions**
1. Adopt the students’ perspective.
2. Welcome students’ thoughts, feelings, and actions into the flow of instruction.

**Instructional Behaviors**
1. Nurture inner motivational resources
2. Rely on informational language
3. Provide explanatory rationales
4. Display patience for self-paced learning
5. Acknowledge and accept expressions of resistance and negative affect

**Controlling**
Interpersonal sentiment and behavior teachers provide during instruction to pressure students to think, feel, or behave in a specific way.

**Enabling Conditions**
1. Adopt the teacher’s perspective.
2. Intrude into students’ thoughts, feelings, and actions during instruction.
3. Pressure students’ to think, feel, or behave in a specific (desirable) way.

**Instructional Behaviors**
1. Use environmental sources of motivation
2. Rely on pressuring language
3. Directives without explanations
4. Impatiently intrude on student’s workspace
5. Counter and try to change expressions of resistance and negative affect
But, what do people actually learn? Multidimensional skill of supporting autonomy

- **Nurture inner motivational resources**
- Provide explanatory rationales
- Use noncontrolling, informational language
- Display patience to allow for self-paced learning.
- Acknowledge and accept negative affect

Vitalization of the other’s interest, enjoyment, psychological need satisfaction (autonomy, competence, relatedness), or sense of challenge or curiosity during the engagement of a requested activity.
NURTURE INNER MOTIVATIONAL RESOURCES
(Autonomy-Supportive Instructional Behavior #1)

When Teachers Need It Most:
* When introducing a learning activity or making a transition to a new activity.
* When seeking student’s active engagement (attention, effort, initiative, participation).

**Autonomy-Supportive Instruction**
Encourage Student Initiative by Involving Inner Motivational Resources, such as:

- Intrinsic Motivation
- Self-Endorsed Goals and Values
- Preference for Optimal Challenge
- Sense of Curiosity

**Controlling Instruction**
Encourage Student Initiative by Relying on Environmental Sources of Motivation, such as:

- Directives, Commands
- Compliance Requests, Assignments
- Incentives
- Rewards (External Contingencies)

Why It Is Important:
* Allows students to feel like origins, rather than pawns, during learning activities.
* Aligns what students do with an authentic sense of wanting to do it.
But, what do people actually learn?
Multidimensional skill of supporting autonomy

- Nurture inner motivational resources
- **Provide explanatory rationales**
- Use noncontrolling, informational language
- Display patience to allow for self-paced learning.
- Acknowledge and accept negative affect

Verbal explanations that help the other person understands why self-regulation of the activity would have personal utility.
Provide Explanatory Rationales
(Autonomy-Supportive Instructional Behavior #2)

When Teachers Need It Most:
* When asking students to engage in uninteresting (but important) lessons.
* When asking students to engage in requested activities, rules, or procedures.

**Autonomy-Supportive Instruction**
Provide Explanatory Rationales by Communicating or Revealing the Endeavor’s Underlying:

- Importance
- Personal Usefulness to the Student
- Value, Especially Hidden Value
- Meaning, Personal Significance

**Controlling Instruction**
Neglect to Communicate Why an Activity Is Worth Doing or a Rule is Worth Following. Hence, Students Experience:

- Activities as Meaningless Busy Work
  - Rules as Arbitrary; Counter to their Wishes
  - Directives, without Explanation

**Why It Is Important:**
* Promotes internalization.
* Students need help to transform what is not worth doing into what is worth doing.
But, what do people actually learn?
Multidimensional skill of supporting autonomy

- Nurture inner motivational resources
- Provide explanatory rationales
- **Use noncontrolling, informational language**
- Display patience to allow for self-paced learning.
- Acknowledge and accept negative affect

Communications that minimize pressure (absence of “shoulds,” “musts,” and “have to’s”) and convey a sense of choice and flexibility in the locution of behavior.
Use Noncontrolling, Informational Language
(Autonomy-Supportive Instructional Behavior #3)

When Teachers Need It Most:
* When communicating requirements, responsibilities, and feedback.
* When addressing motivational and behavioral problems.

<table>
<thead>
<tr>
<th>Autonomy-Supportive Instruction</th>
<th>Controlling Instruction</th>
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<tbody>
<tr>
<td>Communicate Classroom Requirements and Address Problems through Messages that Are:</td>
<td>Communicate Classroom Requirements and Address Problems through Messages that Are:</td>
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<tr>
<td>• Nonevaluative</td>
<td>• Evaluative</td>
</tr>
<tr>
<td>• Flexible</td>
<td>• Rigid</td>
</tr>
<tr>
<td>• Informational</td>
<td>• Pressuring</td>
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</tbody>
</table>

Why It Is Important:
* Maintains a positive teacher-student relationship.
* Helps student diagnose their motivational, behavioral, and performance problems while maintaining their personal responsibility for those problems.
But, what do people actually learn?
Multidimensional skill of supporting autonomy

- Nurture inner motivational resources
- Provide explanatory rationales
- Use noncontrolling, informational language
- **Display patience to allow for self-paced learning.**
- Acknowledge and accept negative affect

Trusting in students’ motivational capacities so that you give them the time and space they need during learning activities to rely on their own natural rhythm (pace).
**Display Patience to Allow Time for Self-Paced Learning to Occur**  
(Autonomy-Supportive Instructional Behavior #4)

**When Teachers Need It Most:**
* When students try to develop skills or learn something unfamiliar or complex.  
* When learning activities require experimentation, reflection, and revision.

### Autonomy-Supportive Instruction
Display Patience While Students:
- Explore and Manipulate Materials
- Make Plans, Set Goals
- Formulate and Test Hypotheses
- Monitor and Revise their Work
- Change Problem-Solving Strategies

### Controlling Instruction
Impatiently Interrupt Student Learning to:
- Intrude on Student’s Workspace
  - Utter a Solution, Answer
  - Show a Solution, Answer
- Say, “Here, let me do that for you.”
- Grab away the Learning Materials

**Why It Is Important:**
* Learning—accommodation, conceptual change, deep information processing—takes time, even if teachers feel that they don’t have that time to give.
But, what do people actually learn?

Multidimensional skill of supporting autonomy

• Nurture inner motivational resources
• Provide explanatory rationales
• Use noncontrolling, informational language
• Display patience to allow for self-paced learning.
• Acknowledge and accept negative affect

Tension-alleviating acknowledgments that the request one is making of the other is in conflict with his or her personal inclinations and that his or her feelings of conflict are legitimate (yet not necessarily inconsistent with activity engagement).
**Acknowledge and Accept Expressions of Resistance and Negative Feelings**

(Autonomy-Supportive Instructional Behavior #5)

*When Teachers Need It Most:*
* During conflict between what teachers want versus what students want.
* When students’ preferences are at odds with the teacher’s requests and requirements.

**Autonomy-Supportive Instruction**

Acknowledge and Accept Students’ Expressions of Resistance and Negative Feelings:

- Acknowledge
- Accept
- Even Welcome

Such Affect as Potentially Valid Reactions to Imposed Demands, Structures, and Constraints.

**Controlling Instruction**

Counter and Try to Change Students’ Expressions of Resistance and Negative Affect:

- Counter
- Argue Against
- Try to Change

Such “Bad Attitude” Is Unacceptable and Needs to Be Changed, Fixed, or Reversed into Something more Acceptable to the Teacher.

*Why It Is Important:*
* To appreciate the students’ perspective, and to give voice to that perspective.
* Creates an opportunity to restructure an otherwise unappealing lesson.
Identify the Critical Period for Each Autonomy-Supportive Behavior During The On-Going Flow of Instruction

Pre-Lesson Preparation and Reflection
Engaging Students in the Lesson
Addressing and Solving the Problems that Arise
Supporting Students Perceived Autonomy During
Pre-Lesson Preparation

Time

Pre-Lesson Preparation and Reflection

Engaging Students in the Lesson

Addressing and Solving the Problems that Arise

Perspective Taking; Acknowledgement of Feelings
Supporting Student Perceived Autonomy to Initially Engage Students in the Lesson

- Pre-Lesson Preparation and Reflection
  - Perspective Taking; Acknowledgement of Feelings

- Engaging Students in the Lesson
  - Nurture Inner Motivational Resources; Provide Explanatory Rationales

- Addressing and Solving the Problems that Arise
  - Monitor and Adjust Instruction to Students’ Engagement Signals
Supporting Student Perceived Autonomy to Address Motivational, Behavioral, and Engagement Problems that Might Arise

Pre-Lesson Preparation and Reflection
- Perspective Taking; Acknowledgement of Feelings

Engaging Students in the Lesson
- Nurture Inner Motivational Resources; Provide Explanatory Rationales

Addressing and Solving the Problems that Arise
- Monitor and Adjust Instruction to Students’ Engagement Signals
- Rely on Noncontrolling, Informational Language and Style

Time
Can Teachers Learn to be More Autonomy Supportive?
# Raters’ Perceptions on Your Motivating Style
*(Autonomy Support on the Right; Controlling on the Left)*

<table>
<thead>
<tr>
<th>Relies on Extrinsic Sources of Motivation</th>
<th>Nurtures Inner Motivational Resources</th>
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<tbody>
<tr>
<td>* Makes Assignments, Seeks Compliance</td>
<td>* Interest, Enjoyment, Sense of Challenge</td>
</tr>
<tr>
<td>* Offers Incentives, Consequences, Directives</td>
<td>* Creates Opportunities for Initiative</td>
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<th>Controlling Language</th>
<th>Informational Language</th>
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<tr>
<td>* Pressuring, Ego-Involving</td>
<td>* Informational, Flexible</td>
</tr>
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<td>* Should, Must, Have to, Got to</td>
<td>* Provides Choices, Options</td>
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<td>* Neglects Value, Meaning, Use, Benefit, Importance of Requests</td>
<td>* Identifies Value, Meaning, Use, Benefit, Importance of Requests</td>
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<th>Displays Impatience</th>
<th>Displays Patience</th>
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<td>* Rushes Student to Produce the Right Answer, Solution, or Behavior</td>
<td>* Allows Student Time and Space for Self-Paced Learning to Occur</td>
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<td>* Sense: There Is a Right Answer—Get It!</td>
<td>* Sense: You Can Discover Solution on Your Own</td>
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<th>Counters &amp; Tries to Change Students’ Negative Affect</th>
<th>Acknowledges &amp; Accepts Students’ Negative Affect</th>
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<tbody>
<tr>
<td>* Blocks/Counters Expressions of Negative Affect</td>
<td>* Listens Carefully, Openly, Understandingly</td>
</tr>
<tr>
<td>* Negative Affect is Not OK, Is Unacceptable, Is Something to be Changed/Fixed</td>
<td>* Accepts Negative Affect, Complaints are OK</td>
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* note for Each Rating: Use the bold, underlined 4 as your starting/anchor point.*
Teachers Naturally-Occurring Motivating Styles tended to be Controlling: Raters’ Scoring of Teachers’ Autonomy-Supportive Behaviors

<table>
<thead>
<tr>
<th>Behavior</th>
<th>Rating</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
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</tr>
<tr>
<td>* Makes Assignments, Seeks Compliance</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>* Offers Incentives, Consequences, Directives</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Controlling Language</td>
<td></td>
<td>1</td>
<td>2.7</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>* Pressuring, Ego-Involving</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Should, Must, Have to, Got to</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Neglects Value, Meaning, Use, Benefit, Importance of Requests</td>
<td>3.1</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neglects Explanatory Rationales</td>
<td></td>
<td>1</td>
<td>1.9</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>* Does not Say: “Because…” or “So…”</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>* Neglects Value, Importance, Use, Benefit, Personal Meaning of Requests</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Displays Impatience</td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>* Rushes Student to Produce the Right Answer, Solution, or Behavior</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>* Sense: There Is a Right Answer—Get It!</td>
<td></td>
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</tr>
<tr>
<td>Counters &amp; Tries to Change Students’ Negative Affect</td>
<td></td>
<td>1</td>
<td>2</td>
<td>3.3</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>* Blocks/Counters Expressions of Negative Affect</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>* Negative Affect is Not OK, Is Unacceptable, Is Something to be Changed/Fixed</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nurtures Inner Motivational Resources</td>
<td></td>
<td>1</td>
<td>3.1</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>* Interest, Enjoyment, Sense of Challenge</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Creates Opportunities for Initiative</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Informational Language</td>
<td></td>
<td>1</td>
<td>2.7</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>* Informational, Flexible</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Provides Choices, Options</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Identifies Value, Meaning, Use, Benefit, Importance of Requests</td>
<td>3.1</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provides Explanatory Rationales</td>
<td></td>
<td>1</td>
<td>1.9</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>* Says, “Because…” and “So…”</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Identifies Value, Importance, Use, Benefit, Personal Meaning of Requests</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Displays Patience</td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>* Allows Student Time and Space for Self-Paced Learning to Occur</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Sense: You Can Discover Solution on Your Own</td>
<td>3.3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acknowledges &amp; Accepts Students’ Negative Affect</td>
<td></td>
<td>1</td>
<td>2</td>
<td>3.3</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>* Listens Carefully, Openly, Understandingly</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Accepts Negative Affect, Complaints are OK</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

*Note for Each Rating: Use the bold, underlined 4 as your starting/anchor point.

# Teachers Can Learn to be More Autonomy-Supportive

Mean Scores for Trained (Experimental) vs. Untrained (Control) Teachers

<table>
<thead>
<tr>
<th>Instructional Behavior</th>
<th>Control Group</th>
<th>Experimental Group</th>
<th>ANCOVA <em>&lt;br&gt;</em>$F(1, 17)$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nurtures inner motivational resources</td>
<td>3.05</td>
<td>5.36</td>
<td>7.79*</td>
</tr>
<tr>
<td>(1.35)</td>
<td>(1.44)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relies on informational language</td>
<td>2.69</td>
<td>5.22</td>
<td>12.44*</td>
</tr>
<tr>
<td>(1.32)</td>
<td>(1.43)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provides explanatory rationales</td>
<td>1.86</td>
<td>3.32</td>
<td>4.74*</td>
</tr>
<tr>
<td>(1.12)</td>
<td>(1.54)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acknowledges and accepts negative affect as okay</td>
<td>3.28</td>
<td>5.13</td>
<td>11.00*</td>
</tr>
<tr>
<td>(0.95)</td>
<td>(1.11)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Teachers Naturally-Occurring Motivating Styles tended to be Controlling:
Raters’ Scoring of Teachers’ Autonomy-Supportive Behaviors

<table>
<thead>
<tr>
<th>Relies on Extrinsic Sources of Motivation</th>
<th>Controlling Language</th>
<th>Nurtures Inner Motivational Resources</th>
<th>Informational Language</th>
<th>Provides Explanatory Rationales</th>
<th>Displays Patience</th>
<th>Acknowledges &amp; Accepts Students’ Negative Affect</th>
</tr>
</thead>
<tbody>
<tr>
<td>* Offers Incentives, Consequences, Directives</td>
<td>* Should, Must, Have to, Got to</td>
<td>* Creates Opportunities for Initiative</td>
<td>* Provides Choices, Options</td>
<td>* Identifies Value, Importance, Use, Benefit, Personal Meaning of Requests</td>
<td>* Sense: You Can Discover Solution on Your Own</td>
<td>* Accepts Negative Affect, Complaints are OK</td>
</tr>
<tr>
<td>1 3.1 4 5.4 7</td>
<td>1 2.7 4 5.2 7</td>
<td>1 2 3 4 5 6 7</td>
<td>1 2.7 4 5.2 7</td>
<td>1 2 3 4 5 6 7</td>
<td>1 2 3 4 5 6 7</td>
<td>1 2 3 4 5 6 7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Neglects Explanatory Rationales</th>
<th>Displays Impatience</th>
<th>Counters &amp; Tries to Change Students’ Negative Affect</th>
<th>Note for Each Rating: Use the bold, underlined 4 as your starting/anchor point.</th>
</tr>
</thead>
<tbody>
<tr>
<td>* Neglects Value, Importance, Use, Benefit, Personal Meaning of Requests</td>
<td>* Sense: There Is a Right Answer—Get It!</td>
<td>* Negative Affect is Not OK, Is Unacceptable, Is Something to be Changed/Fixed</td>
<td></td>
</tr>
<tr>
<td>1 2 3 4 5 6 7</td>
<td>1 2 3 4 5 6 7</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
</tbody>
</table>

Experimentally-Induced Changes in Teachers’ Use of Autonomy-Supportive Instructional Behaviors Increased Students’ Engagement (and Substantially So!)

<table>
<thead>
<tr>
<th>Predictor</th>
<th>r(20)</th>
<th>F(1,16)</th>
<th>beta</th>
<th>Unique $R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Control Variables (time 1)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student Engagement</td>
<td>.58*</td>
<td>1.07</td>
<td>.22</td>
<td>.05</td>
</tr>
<tr>
<td>Teachers’ Autonomy Support</td>
<td>.57*</td>
<td>&lt; 1</td>
<td>.08</td>
<td>.01</td>
</tr>
<tr>
<td><strong>Hypothesized Predictor (time 2)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teachers’ Autonomy Support</td>
<td>.75*</td>
<td>9.63*</td>
<td>.59</td>
<td>.35</td>
</tr>
<tr>
<td><strong>Overall</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall $F(3, 16)$</td>
<td></td>
<td>8.67*</td>
<td></td>
<td>.62</td>
</tr>
</tbody>
</table>
Korean Middle- and High-School PE Teachers Post-Training Motivating Style

Can Teachers Learn How to Be Significantly and Meaningfully More Autonomy Supportive?

Yulan Su found 20 intervention studies built around the goal of training people (teachers, parents, coaches, medical doctors) to be more autonomy supportive toward those they supervise.

Each Intervention Study:
1. Trained an experimental group how to be autonomy supportive.
2. Included a no-training control group.
3. Assessed post-training autonomy support.
Effect size on the effectiveness of autonomy-supportive interventions:

**Broad criteria of inclusion**

\[ d = 0.63 \]

\[ S^2 = 0.25 \quad [SD = 0.50] \]

\[ K = 20 \]

\[ 95\% \; CI = 0.43 \sim 0.83 \]

Results using broad criteria of inclusion:
- Author-labeled autonomy-supportive training or intervention.
- Intervention delivered within the context of an experimental design.
- Data available to calculate the effect size.

Effect size on the effectiveness of autonomy-supportive interventions:

**Narrow criteria of inclusion**

\[ d = 1.33 \]
\[ S^2 = 0.01 \quad [SD = 0.05] \]
\[ K = 6 \]
\[ 95\% \ CI = 1.18 \sim 1.49 \]

Results using narrow criteria of inclusion:

- Experimental studies with random assignment to experimental/control groups.
- At least \( n = 10 \) in experimental group and at least \( n = 10 \) in control group.
- Published in a peer-reviewed scholarly journal.

Two Recent Studies
How to Nurture Inner Motivational Resources
### Two Recent Studies

**Nurturing Autonomy; Nurturing Optimal Challenge**

<table>
<thead>
<tr>
<th>Study 1: Promote Autonomy by Integrating Preferences</th>
<th>Study 2: Promote Optimal Challenge via Jeopardy Game</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Solicit students’ preferred way of learning</td>
<td>• Learn about a lesson on brain structure and function.</td>
</tr>
<tr>
<td>• <strong>Experimental Group:</strong> Learn about attachment theory in a way consistent with preferences</td>
<td>• <strong>Experimental Group:</strong> Learn lesson presented via Jeopardy game</td>
</tr>
<tr>
<td>• <strong>Control Group:</strong> Learn same lesson in traditional way</td>
<td>• <strong>Control group:</strong> Learn same lesson presented with a traditional review.</td>
</tr>
<tr>
<td>• Assess Motivation and Outcomes</td>
<td>• Assess Motivation and Outcomes</td>
</tr>
<tr>
<td>Rank</td>
<td>Activity</td>
</tr>
<tr>
<td>------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>1.</td>
<td>Guest speaker</td>
</tr>
<tr>
<td>2.</td>
<td>Videotape</td>
</tr>
<tr>
<td>3.</td>
<td>Whole-Class Discussion</td>
</tr>
<tr>
<td>4.</td>
<td>Music-Audiotape</td>
</tr>
<tr>
<td>5.</td>
<td>Cooperative Learning</td>
</tr>
<tr>
<td>6.</td>
<td>Independent Work</td>
</tr>
<tr>
<td>7.</td>
<td>Lecture</td>
</tr>
<tr>
<td>8.</td>
<td>Drill and Practice</td>
</tr>
<tr>
<td>9.</td>
<td>Student Presentations</td>
</tr>
<tr>
<td>10.</td>
<td>Worksheet</td>
</tr>
</tbody>
</table>

*Note.* Possible range for each item, 1-7.
## Study 1: Assess Preferences
Benefits from Teaching in Students’ Preferred Way

<table>
<thead>
<tr>
<th>Dependent Measure</th>
<th>Preferred Way (n = 29)</th>
<th>Non-Preferred Way (n = 22)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Autonomy Support</td>
<td>6.04 (0.81)</td>
<td>4.61 (1.20)</td>
</tr>
<tr>
<td>Perceived Autonomy</td>
<td>5.74 (0.87)</td>
<td>5.11 (0.98)</td>
</tr>
<tr>
<td>Self-Reported Engagement</td>
<td>6.29 (0.68)</td>
<td>5.52 (1.14)</td>
</tr>
<tr>
<td>Self-Reported Learning</td>
<td>6.24 (0.56)</td>
<td>5.71 (0.68)</td>
</tr>
</tbody>
</table>

*Note.* All group differences, p < .05.
# Illustration of Brain Jeopardy

## Brain Jeopardy

<table>
<thead>
<tr>
<th>The Neuron</th>
<th>Brain Structures</th>
<th>Brain Functions</th>
<th>Measuring Brain Activity</th>
<th>Limbic System</th>
<th>Educating the Brain</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
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</tr>
<tr>
<td>200</td>
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<td>300</td>
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<td>400</td>
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<td>500</td>
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<td>500</td>
<td>500</td>
<td>500</td>
<td>500</td>
</tr>
</tbody>
</table>

**Rules/Procedure**

1. Participants divided into teams.
2. Player 1 selects a category and the first point number available (start at 100, then work down the list to 500).
3. A correct answer earns the individual’s team that number of points; an incorrect number loses 100 points.
4. Questions continue until all 30 questions have been asked and answered. Team with the highest point total wins.
### Study 2: Induce Optimal Challenge
Benefits from Offering Optimal Challenges

<table>
<thead>
<tr>
<th>Dependent Measure</th>
<th>Lesson with Challenge and Feedback (n = 29)</th>
<th>Lesson without Challenge and Feedback (n = 35)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived Autonomy Support</td>
<td>4.13 (1.69)</td>
<td>2.65 (1.41)</td>
</tr>
<tr>
<td>Perceived Optimal Challenge</td>
<td>0.45 (0.63)</td>
<td>0.77 (0.65)</td>
</tr>
<tr>
<td>Self-Reported Engagement</td>
<td>5.34 (1.10)</td>
<td>3.69 (1.40)</td>
</tr>
<tr>
<td>Self-Reported Learning</td>
<td>5.67 (1.21)</td>
<td>5.10 (1.09)</td>
</tr>
</tbody>
</table>

*Note.* All group differences, $p < .05$. 
“Instead of asking, ‘How can I motivate people?’ we should be asking, ‘How can I create the conditions under which people will motivate themselves.’”

Edward L. Deci

Possible Discussion Questions

- Supporting students’ motivation is harder than being controlling—it takes more time, planning, energy, and effort.

- How realistic is this? How practical is it?

- If autonomy support is so great, then why are teachers so often controlling?