



# Adolescent Development

## Instructor Manual

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This instructor's manual is designed to help you craft a lesson about adolescent development. The module upon which this manual is based defines key features of adolescence and discusses a variety of factors influencing adolescent development. This instructor's manual provides guidance for creating a one- or two-class lesson on adolescent development. The supplied PowerPoint presentation, which includes activities, videos, and discussion questions, is designed to accompany and correspond to this lesson. The manual also contains additional outside resources that you may find useful for your module on adolescent development.

## Learning Objectives

### Content Specific Learning Objectives

- Describe major features of physical, cognitive, and social development during adolescence.
- Understand why adolescence is a period of heightened risk taking.
- Be able to explain sources of diversity in adolescent development.

### Relevant APA Learning Objectives (Version 2.0)

- Describe key concepts, principles, and overarching themes in psychology (1.1)
- Develop a working knowledge of psychology's content domains (1.2)
- Use scientific reasoning to interpret psychological phenomena (2.1)

## Abstract

Adolescence is a period that begins with puberty and ends with the transition to adulthood (approximately ages 10–20). Physical changes associated with puberty are triggered by hormones. Cognitive changes include improvements in complex and abstract thought, as well as development that happens at different rates in distinct parts of the brain and increases adolescents' propensity for risky behavior because increases in sensation-seeking and reward motivation precede increases in cognitive control. Adolescents' relationships with parents go through a period of redefinition in which adolescents become more autonomous, and aspects of parenting, such as distal monitoring and psychological control, become more salient. Peer relationships are important sources of support and companionship during adolescence yet can also promote problem behaviors. Same-sex peer groups evolve into mixed-sex peer groups, and adolescents' romantic relationships tend to emerge from these groups. Identity formation occurs as adolescents explore and commit to different roles and ideological positions. Nationality, gender, ethnicity, socioeconomic status, religious background, sexual orientation, and genetic factors shape how adolescents behave and how others respond to them, and are sources of diversity in adolescence.

## Class Design Recommendations

This topic may be taught in one long class period (75-90 minutes) or two short class periods (50-60 minutes each). The Noba PowerPoint slides will also assist you in determining what schedule works best for your class.

- Adolescence Defined
- Physical Changes
  - Puberty
- Cognitive Changes
  - Changes in Brain Functioning
  - Changes in Brain Structure
- Social Changes
  - Parents

- Peers
- Romantic Relationships
- Behavioral and Psychological Adjustment
  - Identity Formation
  - Aggression and anti-social behavior
  - Anxiety and Depression
  - Academic achievement
  - Diversity

## Module Outline

- **Adolescence Defined:** Adolescence starts at puberty and ends at adulthood (roughly ages 10-20). Historically, adolescence has been lengthening as today puberty begins earlier on average and transition into adulthood later than in the past. The prolonging of adolescence prompted the coining of a new developmental period called **emerging adulthood**, taking place from approximately ages 18-29 (Arnett, 2000).
- **Physical Changes:** Puberty marks on the onset of adolescence, driven by changes in hormones (increased testosterone for boys, increased estrogen for girls).
  - Changes include growth spurt, new pubic and underarm hair, and skin changes (pimples)
  - Boys grow facial hair and the voice deepens.
  - Girls experience breast development and begin menstruating.
- **Cognitive Changes:** Major changes in brain structure and functioning occur in adolescence.
  - Thinking becomes more abstract and complex, facilitated by enhanced attention, memory, processing speed and metacognition.
  - Changes in the brain's dopamine system increase reward motivation and sensation-seeking, which leads to heightened risk-taking (physical risks, use of alcohol and drugs).

- The prefrontal cortex develops late in adolescence, increasing cognitive control and self-regulation. However, because the dopaminergic system changes occur earlier, there is a window of time when it is as if adolescents have a powerful engine but no braking system (Steinberg, 2008).
- **Social Changes:** Key changes in social relationships take place in adolescence, including the adolescent's relationships with parents, peers, and romantic partners.
  - Relationships with Parents
    - Adolescence involves a renegotiation of parent-child relationships, as adolescents strive for greater independence and autonomy.
    - Distal monitoring by parents (e.g. setting rules, getting to know a child's friends, listening to what an adolescent discloses) becomes more important as adolescents spend more time with peers and away from parents.
    - **Psychological control** involves manipulation and intrusion into adolescent's cognitive and emotional worlds by invalidating adolescents' feelings and pressuring them to think in certain ways. This is linked to more problematic adjustment during adolescence.
  - Relationships with Peers
    - While children's friendships focus on shared activities, adolescent friendships involve intimate exchanges of thoughts and feelings.
    - Peer groups become mixed-sex adolescence.
    - Adolescent peer groups tend to be similar in attitudes and behavior. This may be because similar adolescents "flock together" and because the adolescent group itself shapes the psychology of its members.
    - Adolescents tend to engage in riskier behavior in groups than they would alone or with parents, and **deviant peer contagion** is a process by which problem behaviors are reinforced by approval within the peer group.
    - Peers also provide crucial social support and companionship during adolescence, and positive peer relationships relate to happiness and adjustment during this period.
    - **Crowds** (distinct from cliques or friendships) emerge during adolescence, and are characterized more by shared reputations or **prototypic identities** (e.g., jocks, brains)

than actual social interactions between crowd members.

- Romantic relationships

- Romantic relationships typically first emerge in adolescence, in the context of new mixed-sex peer groups.
- These relationships are generally short-lived, but command a lot of adolescents' time and can influence both positive and negative emotions.
- Romantic relationships contribute to adolescent identity development and emerging sexuality and sexual identity (e.g. straight, lesbian, gay, bisexual, transgender)
- Parents, policymakers, and researchers have often viewed adolescent sexuality in narrow terms of concern about teen pregnancy and contraception.

- **Behavioral and Psychological Adjustment**

- Identity formation

- Erikson viewed identity formation as the crucial developmental task of adolescence.
- Marcia described potential exploration and commitment to ideologies and roles that could lead to 4 different identity statuses.
  - Foreclosure: an individual commits to an identity without exploring options.
  - Identity diffusion: when adolescents neither explore nor commit to an identity.
  - Moratorium: adolescents are actively exploring but have not made commitments.
  - Identity achievement: adolescents explore options and make commitments.
- A similar model of ethnic identity development has also been proposed.

- Aggression and anti-social behavior

- Early starters: aggressive and anti-social behavior begins in childhood.
- Late starters: aggressive and anti-social behavior begins in adolescence.
- Early starters are theorized to be at greater risk for continued anti-social behavior into adulthood.

- Anti-social behavior limited to adolescence is thought to result from a “maturity gap” between dependence on parents and desire to establish freedom from adult constraints.
- Anxiety and depression
  - Starting in adolescence, females experience higher rates of anxiety and depression than males.
  - Suicide is one of the leading causes of death in adolescence.
  - Interpersonal factors contributing to depression and anxiety are family adversity, abuse, and parental psychopathology.
  - Depressed youth tend to select other depressed youth as friends to **co-ruminate**, exacerbating negative affect and stress.
  - Depression and anxiety negatively affect relationships, thus creating a vicious circle.
- Academic achievement
  - Achievement in adolescence is predicted by factors that are interpersonal (parental engagement), intrapersonal (intrinsic motivation), and institutional (school quality).
  - Achievement is a marker of positive adjustment and sets the stage for future educational and career opportunities.
  - Dropping out of school is a risk factor for unemployment or underemployment.
- Diversity
  - While brain development and pubertal changes are relatively universal, other aspects of adolescence are more environmentally and culturally variable.
  - Adolescent opportunities for risk taking vary among cultures and countries.
  - Cultural norms differ as to adolescents’ autonomy and control over decisions.
  - Even within the same country, gender, ethnicity, social class and personality can shape diverse developmental contexts for adolescents.
  - Discrimination can present sets of challenges for ethnic or sexual minority adolescents.
  - Genetic variation and **differential susceptibility** to environmental factors may affect development (e.g., CHRM2 genotype and aggression for adolescents with parents with low in monitoring behaviors).

## Difficult Terms

Co-ruminate

Deviant peer contagion

Differential susceptibility

Emerging adulthood

Foreclosure

Gene X environment interactions

Homophily

Moratorium

Prefrontal cortex

Prototypic identities

Psychological control

## Lecture Frameworks

Overview: This lecture framework can be delivered in two 50-60 minute periods, or condensed into one longer lecture period (e.g., 75-90 minutes). Students will begin with a warm-up to get them reflecting upon their adolescence and to get them to consider whether they are adults yet, or in the period of emerging adulthood. Next, students will learn about physical and cognitive changes in adolescence, highlighted by an activity demonstrating the development of formal operations. A discussion of social changes during adolescence follows, and the first class ends with a classroom assessment technique (CAT) to assess student understanding. The second class begins with a review of the previous day (based on the results of the CAT from day 1). Students engage with issues of behavioral and psychological adjustment in adolescence. A “student jury” activity allows students to debate policy questions related to adolescence, and another activity asks students to reflect on high school stress, and social and individual factors that may contribute to stress. Finally, this lesson also ends with a CAT.

### First Class (50-60 minutes)

- **Warm Up Activity – Adolescence Defined:** The purpose of this activity is to have students reflect on their own adolescence, as well as the new category of emerging adulthood.
  - See the Activities/Demonstrations section for a full explanation of how to accomplish this warm up activity.

- **Direct Instruction of Changes in Adolescence:** Refer to the slides to explain physical changes in adolescence and to explain cognitive changes in adolescence
- **Formal Operations in Adolescence Activity:** The purpose of this activity is to demonstrate the development of formal operations and what they entail.
  - See the Activities/Demonstration section for detailed instructions for this activity.
- **Direct Instruction of Social Changes in Adolescence:** Explain that adolescence is a time of great social changes, which are related to the physical and cognitive changes discussed earlier. Specifically, refer to the slides to explain how relationships with parents change in adolescence; explain that peer relationships are very central during adolescence; and explain that romantic relationships typically begin in adolescence, and contribute to identity and sexual orientation/identity development.
- **Classroom Assessment Technique (CAT) – The Muddiest Point:** The purpose of this activity is to assess how students are gaining knowledge, or not.
  - Refer to the Activities/Demonstrations section for a complete description on how to conduct this CAT.

## Second Class (50-60 minutes)

- **Review:** Start the class by reviewing student responses from the previous Muddies Point CAT. Clarify any information that was commonly misperceived and use this information as a starting point for this class.
- **Direct Instruction of Behavioral and Psychological Adjustment:** Refer to the slides to: explain the importance of identity formation during adolescence; discuss the potential emergence of aggression and anti-social behavior in adolescence; and to discuss the common experience of anxiety and depression in adolescence
- **Submitting the Teen Brain to a Student Jury Activity:** The purpose of this activity is to carry out an activity to help students think about policy implications of adolescent brain development.



- See the Activities/Demonstrations section for detailed instructions on how to complete this activity.
- **Direct Instruction of Behavioral and Psychological Adjustment (continued):**After the activity, refer to the slides to: explain the importance of academic achievement in adolescence; to discuss diversity in adolescence development in different cultures, social classes, and different social groups within countries; and to discuss the impact of discrimination on development
- **Reflections on Adolescent Stress and Anxiety Activity:**The purpose of this activity is to carry out an activity to help students reflect on their own experience and to think about the sources of anxiety in high school.
  - See Activities/Demonstrations section for detailed instructions on this activity.
- **CAT—The One-Minute Paper:**The purpose of this CAT is to assess the most important things that students learned, and what questions remain unanswered.
  - End class by asking students to write a brief response to the following questions:
    - “What was the most important thing you learned during this class?” and
    - “What important question remains unanswered?”
  - Follow up during the next class period to mention a few important things that students said that they learned.
  - If the students’ unanswered questions can be quickly clarified, do so. If not, try to connect them to the next unit in your class, where the question may be readdressed.

## Activities & Demonstrations

Warm-up Activity Adolescence Defined: The purpose of this activity is to have students reflect on their own adolescence, as well as the new category of emerging adulthood.

- Time: 5 minutes
- Materials: Warm-Up slide (see PowerPoint slides)
- Directions:
  - To begin the class, ask students to reflect on their own adolescence, how they generally felt and what their daily activities were like.
  - Then, ask students to reflect on whether they feel that they are an adult, an adolescent, or somewhere in between?
  - Ask them why they feel this way, and what developmental achievements they associate with adulthood that they may not have achieved yet.
  - Use this brief discussion as a jumping off point to explain that adolescence has traditionally been seen as starting at puberty and ending at adulthood (roughly ages 10-20). However, adolescence has been lengthening over historical time, and today puberty typically begins earlier and adulthood begins later than in the past.
  - Explain that this prolonging of adolescence has even prompted the coining of a new developmental period called **emerging adulthood**, which takes place from approximately ages 18-29.

Formal Operations in Adolescence Activity: The purpose of this activity is to demonstrate the development of formal operations and what they entail.

- Time: 12-14 minutes
- Materials: Formal Operations video (see PowerPoint slides).
- Directions:
  - Observe and compare the behavior of a younger child and an adolescent these two Piagetian “formal operations” tasks
  - Watch video: <https://www.youtube.com/watch?v=zjJdcXA1KH8>
  - Introduce a “Think-Pair-Share” activity
    - Tell the class that when discussing the videos with their partner, they should:
    - Take turns, and try to have an equal speaking time
    - Listen carefully and ask clarifying questions of one another

- You should be able to explain your partner's thinking, as well as your own
- Feel free to write notes as you discuss with your partner
- Discuss the following questions with a partner (5 minutes)
  - What differences did you notice between the two examples? (child vs. adolescent).
  - How do these examples illustrate the abstract and complex thinking characteristic of adolescents?
  - What new things might this more advanced type of thinking allow an adolescent to do?
- Class Discussion and Sharing (5 minutes)
  - "Cold call" various pairs of students to share what they have talked about.

CAT: The Muddiest Point: The purpose to this CAT is to assess how students are gaining knowledge, and what concept remain unclear.

- Time: 2-3 minutes
- Materials: The "CAT" slide (see PowerPoint slides). Students need a piece of paper.
- Directions:
  - Ask students to take 1-2 minutes to answer these questions:
  - What was the muddiest point about today's class?
  - Write down the concept you are still struggling to understand.
- Review answers after class and use students' responses to help guide your review at the start of day 2.

Submitting the Teen Brain to a Student Jury Activity: The purpose of this activity is to carry out an activity to help students think about policy implications of adolescent brain development.

- Adapted from: <http://www.psychologicalscience.org/index.php/publ...>
- Time: 25 minutes
- Materials: Debate questions (see PowerPoint slides).

- Directions:
  - Compared with children and adults, adolescents take more risks. They are more likely to experiment with controlled substances, chance unprotected sex, commit crime, and drive recklessly. The following synopses of research on the adolescent brain and behavior by Albert, Chein, and Steinberg (2013) and Bonnie and Scott (2013) suggest thought-provoking discussion questions.
  - *Start by asking students the following questions:*
    - *Do examples of risky teen behaviors come to mind from your middle and high school days?*
    - *Did you observe or engage in behaviors that, on reflection, seem kind of dumb?*
    - *Why do you think adolescents are more risk-prone?*
    - Are teens worse at assessing long-term risks like tobacco addiction, or the possibility of pregnancy, or the dangers of speeding?
- During discussion, you can point out that, actually, teen comprehension of risk tends to be quite accurate. Adolescent risk-taking instead appears to stem from two factors: *a not-yet mature prefrontal cortex, leading to poorer planning and impulse control*, and *b. greater peer influence*. Teens, more than children and adults, are herd animals. Teens tend to commit delinquent acts in groups, while adults more often offend solo. In laboratory driving simulations, teens likewise — when in the presence of other teens — take more risks, such as running more yellow lights, leading to immediate rewards but risking accidents. It is as if the presence of peers shortens teens' time focus, making them more attuned to immediate rewards. Here is a good metaphor: Peer influence steps on the gas pedal, and still-developing frontal lobes do not yet have full braking power.
- The activity then has groups of students debate contentious policy questions relating to adolescence. Form two groups of three students for each of the two debate questions (12 students total). By random assignment, one team of three argues for one side, and another team of three argues for the other side of the debate (each side gets two turns, 1 minute per turn, for a total of 4 minutes of debate). After debating, have members of both debating teams wait outside of class for three minutes while the class deliberates about which side made the most convincing argument. Team members re-enter the classroom and receive the decision.
- Here are the questions for debate:
  - **If 15-year-olds have immature brains that are attuned to social influences and**

**immediate rewards, but that also have limited braking capacity, should they — after committing a violent crime — not be tried and sentenced as adults?** In response to violent juvenile crime increases, legislatures during the 1980s and 1990s decided it was time to get tough by giving violent youth punitive long sentences that remove them from society. Others object to trying juveniles as adults, noting that many teen offenses are a temporary product of the adolescent brain. What do you say on this question?

- **Teen driving risk is highest given a mix of a) nighttime driving, b) peers in the car, and c) alcohol. In your opinion, do these facts justify proposals for “graduated licensing,” which increases teen driving opportunities only gradually?** For example, 16-year-olds might be allowed daytime driving alone or with an adult for the first six months, then nighttime driving, then (say, during their 18th year) driving with one peer, and thereafter — after the brain has further matured and peer influence becomes less commanding — unrestricted driving. Or is graduated licensing a bad or unworkable idea?

Reflections on Adolescent Stress and Anxiety Activity: The purpose of this activity is to carry out an activity to help students reflect on their own experience and to think about the sources of anxiety in high school.

- Time: 15 minutes
- Materials: Chalkboard and chalk, or Whiteboard and marker. Use the corresponding Activity slides (see PowerPoint slides).
- Directions:
  - Ask students to reflect on what caused them stress while they were in high school, and then have them take a few minutes to jot down as many sources of stress as they can remember from that time on a piece of paper.
  - Following this period of reflection, ask students to come to the front of the class and write three of their sources of stress in high school on the white board. Ask them to write (under their sources of stress) where they attended high school (they can put a country, city, or state), their self-identified gender and, if they are willing, in what year they graduated HS. You as the instructor can also write your own reflections on the board, as a way of demonstrating your membership in the discussion.
  - After this is done and students are seated again, ask them to form groups of 2 or 3 and consider these questions:

- What are the general themes that you notice on the board?
  - Can you group the themes based on any of the demographic variables provided?
  - Are there any sources of stress that you thought you would see written on the board that are not there?
- After students share their thoughts with one another, engage in a large group discussion about the themes they have identified.
  - This discussion is a great opportunity for students to share how their cultural/historical/regional upbringing influenced the ways in which they experienced stress in high school, and to identify commonalities and differences within our class.

CAT—The One Minute Paper: The purpose of this CAT is to assess how students are gaining knowledge, or not.

- Time: 2-3 minutes.
- Materials: The “CAT” slide (see PowerPoint slides). Students need a piece of paper.
- Directions:
  - End class by asking students to write a brief response to the following questions:
    - “What was the most important thing you learned during this class?” and
    - “What important question remains unanswered?”
- Follow up during the next class period to mention a few important things that students said that they learned.
- If the students’ unanswered questions can be quickly clarified, do so. If not, try to connect them to the next unit in your class, where the question may be readdressed.

## Additional Activities

Desforges, D. M. (1994). Applying theories of development: An exercise for teaching adolescent psychology. *Teaching of Psychology*, 21, 245-246. doi:10.1207/s15328023top2104\_12

- This activity is designed to help students in adolescent psychology better understand theories of development by applying them to characters in the film *The Breakfast Club*. Undergraduates watch the film and are asked to view the characters in terms of where they would be classified according to each of the 3 theories, and then discussed their conclusions. The theories described are L. Kohlberg's moral reasoning, E. Erikson's psychosocial development, and J. E. Marcia's identity statuses. This is appropriate for any size of class and can be completed by students either in or outside of class.

Schwanenflugel, P.J. (1987). An interview method for teaching adolescent psychology. *Teaching of Psychology*, 14(3), 167-168. doi:10.1207/s15328023top1403\_9

- This article describes an experiential activity for teaching adolescent psychology in which students interview adolescents on course topics to be covered the following week and write a report based on the interview. This activity helps students connect theories about adolescents with an interaction with a real, live adolescent. This should be completed outside of class, and then discussed in class.

## Discussion Points

- What can parents do to promote their adolescents' positive adjustment?
  - This question is meant to stimulate discussion of the renegotiation involved in parent-child relationships during adolescence. Discussion of distal monitoring and psychological control would be especially relevant here.
- In what ways do changes in brain development and cognition make adolescents particularly susceptible to peer influence?
  - This question is a good complement to Activity #2. Increased reward responsivity, an incompletely developed prefrontal cortex, and social relationships based in peer groups all combine to increase this susceptibility, and should all be addressed.
- Reflecting on your own adolescence, provide examples of times when you think your experience was different from your peers as a function of something unique about you?
  - This question centers on contemplation of individual factors in adolescence, and how

racism, sexism, and other common perceptions of “differences” between people loom large in adolescence and affect each of our personal experiences.

- In what ways was your experience of adolescence different from that of your parents? How do you think adolescence may be different 20 years from now?
  - This question is meant to provoke students to consider generational and socio-historical changes in adolescence.

## Outside Resources

**Podcasts:** Society for Research on Adolescence website with links to podcasts on a variety of topics, from autonomy-relatedness in adolescence, to the health ramifications of growing up in the United States.

<http://www.s-r-a.org/sra-news/podcasts>

**Study:** The National Longitudinal Study of Adolescent to Adult Health (Add Health) is a longitudinal study of a nationally representative sample of adolescents in grades 7-12 in the United States during the 1994-95 school year. Add Health combines data on respondents’ social, economic, psychological and physical well-being with contextual data on the family, neighborhood, community, school, friendships, peer groups, and romantic relationships.

<http://www.cpc.unc.edu/projects/addhealth>

**Video:** This is a series of TED talks on topics from the mysterious workings of the adolescent brain, to videos about surviving anxiety in adolescence.

<http://tinyurl.com/lku4a3k>

**Web:** UNICEF website on adolescents around the world. UNICEF provides videos and other resources as part of an initiative to challenge common preconceptions about adolescence.

<http://www.unicef.org/adolescence/index.html>

## Evidence-Based Teaching



Amadeo, J. A., Hennessy, N., & Torney-Purta, J. (2012). Adolescents' identity development during political and social transitions: A unit for undergraduate psychology classes. *Psychology Learning & Teaching*, 11, 433-438. doi:10.2304/plat.2012.11.3.433

- This article describes a unit for an undergraduate developmental psychology course that explores major political, social, and economic transitions before and after the fall of communism and how these social conditions influence adolescent development. Comments during the class sessions and the end-of-unit assessment from the pilot class indicated that this unit helped to elaborate students' worldviews about unfamiliar environments and increased their awareness of the influence of context on human development.

McManus, J. L. (1986). 'Live' case study/journal record in adolescent psychology. *Teaching of Psychology*, 13, 70-74. doi:10.1207/s15328023top1302\_5

- This article describes the use of case study and journal record methods in teaching about adolescent psychology. 91 college students and 91 teenagers participated in a weekly teen teacher project in which records were kept of the teens' development; 41 college students chose an alternate research activity. Areas investigated included grade attainment, "live" vs the usual case study method, and outcomes. Positive outcomes were observed for those involved in the case study/journal record procedure in areas of course relevance, student motivation, integration of course concepts, application of conceptual information, and affective learning.

## Links to ToPIX Materials

### A Compendium of Engagement Activities for Child and Adolescent Psychology

<http://topix.teachpsych.org/w/page/19980987/Development%20in%20the%20Classroom#s-thash.TYeEgFxA.dpuf>

**In the Classroom: Case Study Method in Adolescent Psychology** This ToP article describes how to use a case study to teach concepts in adolescent psychology. McManus, J. L. (1986).

<http://topix.teachpsych.org/w/page/19980987/Development%20in%20the%20Classroom>

**The App Generation: Identity, Intimacy, and Imagination in the Digital Era.** Howard Gardner

explores the challenges facing today's young people as they navigate three vital areas of adolescent life - identity, intimacy and imagination - in a digital world.

<http://topix.teachpsych.org/w/page/19980986/Development%20Video>

The teenage brain - Spock v. Captain Kirk (NPR, 3/11/15). A story about adolescent brain development (and why teens are more inclined to risky behavior due to underdeveloped prefrontal cortexes).

<http://topix.teachpsych.org/w/page/19980985/Development%20In%20the%20News>

## Teaching Topics

Teaching The Most Important Course

[https://nobaproject.com/documents/1\\_Teaching\\_The\\_Most\\_Important\\_Course.pdf](https://nobaproject.com/documents/1_Teaching_The_Most_Important_Course.pdf)

Content Coverage

[https://nobaproject.com/documents/2\\_Content\\_Coverage.pdf](https://nobaproject.com/documents/2_Content_Coverage.pdf)

Motivating Students

[https://nobaproject.com/documents/3\\_Motivating\\_Students\\_Tips.pdf](https://nobaproject.com/documents/3_Motivating_Students_Tips.pdf)

Engaging Large Classes

[https://nobaproject.com/documents/4\\_Engaging\\_Large\\_Classes.pdf](https://nobaproject.com/documents/4_Engaging_Large_Classes.pdf)

Assessment Learning

[https://nobaproject.com/documents/5\\_Assessment\\_Learning.pdf](https://nobaproject.com/documents/5_Assessment_Learning.pdf)

Teaching Biological Psychology

[https://nobaproject.com/documents/6\\_Teaching\\_Bio\\_Psych.pdf](https://nobaproject.com/documents/6_Teaching_Bio_Psych.pdf)

## PowerPoint Presentation

This module has an associated PowerPoint presentation. Download it at

[https://nobaproject.com//images/shared/supplement\\_editions/000/000/248/Adolescent%20Development.pptx?1475702308](https://nobaproject.com//images/shared/supplement_editions/000/000/248/Adolescent%20Development.pptx?1475702308).

## About Noba

The Diener Education Fund (DEF) is a non-profit organization founded with the mission of re-inventing higher education to serve the changing needs of students and professors. The initial focus of the DEF is on making information, especially of the type found in textbooks, widely available to people of all backgrounds. This mission is embodied in the Noba project.

Noba is an open and free online platform that provides high-quality, flexibly structured textbooks and educational materials. The goals of Noba are three-fold:

- To reduce financial burden on students by providing access to free educational content
- To provide instructors with a platform to customize educational content to better suit their curriculum
- To present material written by a collection of experts and authorities in the field

The Diener Education Fund is co-founded by Drs. Ed and Carol Diener. Ed is the Joseph Smiley Distinguished Professor of Psychology (Emeritus) at the University of Illinois. Carol Diener is the former director of the Mental Health Worker and the Juvenile Justice Programs at the University of Illinois. Both Ed and Carol are award-winning university teachers.

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