

December 2022

# Reflection on Best Practices in Designing Online Middle Level Learning

Holly J. Thornton

*Appalachian State University*, [thorntonhj@appstate.edu](mailto:thorntonhj@appstate.edu)

Follow this and additional works at: <https://digitalcommons.georgiasouthern.edu/cimle>



Part of the [Curriculum and Instruction Commons](#), [Educational Methods Commons](#), [Junior High, Intermediate, Middle School Education and Teaching Commons](#), and the [Online and Distance Education Commons](#)

---

### Recommended Citation

Thornton, Holly J. (2022) "Reflection on Best Practices in Designing Online Middle Level Learning," *Current Issues in Middle Level Education*: Vol. 27: Iss. 1, Article 4.

DOI: 10.20429/cimle.2022.270104

Available at: <https://digitalcommons.georgiasouthern.edu/cimle/vol27/iss1/4>

This best practices is brought to you for free and open access by the Journals at Digital Commons@Georgia Southern. It has been accepted for inclusion in Current Issues in Middle Level Education by an authorized administrator of Digital Commons@Georgia Southern. For more information, please contact [digitalcommons@georgiasouthern.edu](mailto:digitalcommons@georgiasouthern.edu).

## Reflection on Best Practices in Designing Online Middle Level Learning

Holly J. Thornton

Appalachian State University

### Abstract

An increase in online learning during the pandemic has led to new thinking about online instruction that will last far beyond the pandemic. The hurried nature of instructional design as the pandemic shifted teaching and learning from the classroom to the computer may have neglected the need to design lessons using best practices online instead of focusing on content delivery and grading. Practices that are part of successful middle level education including cultivating depth of student understanding, developmental responsiveness, social emotional learning, and differentiation to meet young adolescent student needs may have been neglected in pandemic online lesson design. This article suggests that now is the time to pause for reflection on previous online learning design as teachers use a guided process built on successful middle level practices. As teachers reflect on their previous online experiences and what they know and understand as expert middle level educators, the future of online learning will become more meaningful not only for teachers but also for the young adolescent learners they are committed to reach and teach.

*Keywords:* online learning, developmentally responsive practice, best practices

### Increase in Online Learning

As the pandemic thrust unexpected teachers and learners into an online world of middle school for which they were not prepared, post-pandemic reflection on this experience is vital to the future of online middle level education. Teachers across all content areas were struggling to translate their lessons to a remote format and to figure out how to evaluate online student learning (Trust & Whalen, 2020). Intermittent school closings, lockdowns, financial distress for families, and a general disruption of day-to-day life only exacerbated the difficulties of moving public schools online without necessary planning, thought, understanding, and preparation. But the presence of online education will continue post pandemic, making it essential for educators to reflect upon their recent experiences designing online learning and to learn how to better align this design with best practices and their expertise as professional educators. Even before COVID-19, there was a high growth in education technology, with global edtech investments reaching \$18.66 billion in 2019 and the overall market for online education projected to be \$350 billion by 2025 (World Economic Forum, 2020).

Online education continues to be an emphasis and goal within many political and business based educational voices as families in many districts are demanding more online options (Gross, 2021). The American School District Panel (ASDP) survey in June 2021, which assessed districts' plans to offer both temporary and more-lasting remote instruction, suggests

that K–12 remote instruction will far outlast the pandemic. Since the pandemic began, the number of districts running virtual schools has grown nine-fold. Even within districts that had no plans to operate a virtual school in the 2021–2022 school year, one-quarter expressed at least some interest in operating a virtual school sometime in the future (Diliberti & Schwartz, 2021). In 2014 only 3 % of middle schools offered courses that were completely online, while in the spring of 2021 80% of eighth grade public schools had totally remote online course offerings (ThinkImpact, 2022). Online education will undoubtedly find new audiences as the flexibility and learning possibilities that have emerged from necessity shift the expectations of students and educators, further blurring the line between classroom-based instruction and virtual learning (Lockee, 2021).

### **Time for reflection**

As of September 2021, all public schools (100%) offered in-person instruction, and approximately one-third (34%) offered remote instruction (NCES, 2021). As school closures decline and face-to-face instruction returns post pandemic, there is time to reflect upon teaching practices in terms of lessons learned and rethinking instructional design in an online environment. In 2020, 63% of parents perceived online instruction as being worse than face to face learning with completion rates for online courses up to 22% lower for some students (ThinkImpact, 2022). This is particularly important for middle level teachers to examine, as D and F grades increased as much as 30% for middle school students participating in online learning (ThinkImpact, 2022). During the pandemic, a range of instructional design transpired in virtual schooling, often with vendors making content and design decisions with the role of the school as purchasing and teachers as distributing courses to students, while in some cases teachers made the content and design decisions at the school level (Diliberti & Schwartz, 2021). Although the pandemic caused new instructional approaches to be forced and hurried, the experience has served as a rare chance to reconsider strategies that best facilitate learning within the benefits and constraints of an online environment (Lockee, 2021). Middle level teachers are well poised to utilize reflection to look back and examine how their teaching developed during the pandemic crisis. Grounding such reflective practice in the knowledge base about reaching and teaching young adolescents may provide a path for middle school educators to reimagine and redesign their online teaching now and in the future.

Teachers can frame this reflection in terms of best practices in middle level teaching and learning by using the essential attributes of successful middle level education. AMLE (Association for Middle Level Education) supports learning that is responsive to the nature and identities of young adolescent that empowers students to take responsibility for their own learning within classrooms that are equitable, socially just, participatory and motivating (Bishop & Harrison, 2021). AMLE further states successful middle schools focus on depth of understanding, curriculum that is challenging, exploratory, integrative and embracing the use of varied assessments which not only measure learning, but advance further learning for young adolescent learners (Bishop & Harrison, 2021). Designing such learning during the pandemic was no small challenge, given the lack of professional development, resources, and most importantly planning time for collaboration and teacher decision-making. Consequently, teachers likely found themselves scrambling to find materials and activities aligned with grade level curricula and spent much time helping students navigate assignments, while they chased down missing work to try to determine grades. Teachers found it difficult to create the same

experiences online that they could in the classroom, as successful online courses are designed to be online courses rather than simply face-to-face courses that are delivered online (Bryson & Andres, 2020).

### **Online Middle Level Best Practices**

The good news is that there are excellent middle level teachers who both understand and incorporate the very elements that make learning successful for young adolescent learners in their face-to-face classrooms on a regular basis. Now is the time to connect their knowledge and skills related to face-to-face learning to teaching in an online environment to allow a shift from completing activities to generate grades, back to best practices. Four best practices were identified that parallel and reflect AMLE's essential elements and characteristics of curriculum and assessment described above. These four practices include cultivating depth of student understanding, developmental responsiveness, social emotional learning and differentiation to meet individual student needs. Thinking about how these practices were or were not a part of their online courses enables teachers to identify their strengths and set goals for future online instructional design. An *online design reflection guide* to help teachers reflect upon and analyze their online courses was developed based on these identified practices (Appendix A).

#### **Depth of Understanding**

Cognitively, young adolescents are poised to build bridges between concrete thinking and conceptual understanding. Focusing on meaningful learning and cultivating student understanding has been a guiding concept in education since the inception of Bloom's taxonomy, and well before when considering Dewey and even Socrates. When designing online learning experiences, a commitment to teaching for student understanding is imperative to avoid the cobbled together nature of finding activities for students "to do". Two frameworks may be helpful in this endeavor. Webb's depth of knowledge (DOK) framework provides a process and criteria for systematic design alignment between standards, curricula, learning activities and assessments through analysis of the cognitive expectations these demand of students (Webb, 2005). Biggs and Collis' (1982) SOLO (structure of observed learning outcomes) taxonomy allows for analysis of depth of understanding through classifying evidence of student learning outcomes in terms of their complexity. The use of these two lenses allows one to examine online learning experiences in terms of higher-level thinking. If online learning is designed to have students to fill in blanks after reading or viewing videos, follow steps in math problems and science experiments, playing recall games or reading online texts to find information, then understanding is not the goal. Designing online learning that is scaffolded for students to engage in PBL, collaborate to do research, design videos to share their understanding of a culture they virtually visited, interview community members about environmental challenges and construct public service campaigns are more in line with the practices middle level teachers use in their face-to-face classrooms to teach for understanding and application beyond the world of school. Reflection on depth of content knowledge and student understanding make up the first and second sections of the *online design reflection guide*.

#### **Developmental Responsiveness**

According to AMLE, one of the core principles of effective middle level education is developmental responsiveness (AMLE, 2010). Considering the nature of young adolescent

learners should guide online course design including consideration of intellectual/cognitive, moral, and social emotional development. Within an online learning environment teachers need to provide a variety of educational approaches, materials, and paths to address young adolescents' range of cognitive abilities. Online learning experiences need to be meaningful for young adolescents and provide opportunities for exploration as students interact directly with their world through discourse and hands-on experiences addressing real life concepts and issues. (Kellough & Kellough, 2008, Stevenson, 2002). Responsiveness to young adolescents' moral development means that teachers design online learning experiences that foster critical thinking skills and higher levels of moral reasoning. Teachers can design learning that helps students to incorporate their thoughts and feelings (Scales, 2010) and engage young adolescents with activities that require consensus building and application of democratic principles online through effective teamwork, peer collaboration, and active listening and decision-making skills. For example, this can be done through designing content-based online learning experiences where students examine moral dilemmas and contemplate responses (Scales, 2010) within academic fields such as science and social studies. Such experiences can help young adolescents to develop values, resolve problems, and set their own behavior standards (Kellough & Kellough, 2008).

Content learning can include a focus on societal issues such as the environment, poverty, or racial discrimination using a variety of reliable online sources aligned with skills and concepts within state curricula. In order to respond to young adolescent psychological development, middle level teachers need to support adolescents' quests for identity by designing learning opportunities that allow students to explore and experiment with various roles and experiences and that incorporate opportunities for student choice and self-assessment. Perhaps one of the most challenging developmental needs to address within an online structure is the young adolescents' need for affiliation, belonging and forming affirming and healthy relationships with peers (Scales, 2010). Opportunities to design cooperative learning and collaborative experiences to interact productively with peers can be intentionally designed into online learning experiences. Multiple tools for collaboration exist and are readily available as well as activities that simulate social situations or role-playing that will develop student understanding of multiple perspectives within content learning. These opportunities may have been largely absent within online lessons during the pandemic rush for content. Now, middle level teachers can focus on being developmentally responsive when designing online learning, building on their experience in designing face-to-face lessons. Developmental responsiveness is reflected in the third section of the *online design reflection guide*.

### **Social Emotional Learning**

Young adolescents seek to belong as they figure out their identities within their social world, thus suggesting the importance of social and emotional learning at this developmental level. A widely accepted framework for social and emotional learning was developed by the Collaborative for Academic, Social, and Emotional Learning (CASEL). The five competencies of this model are (a) self-management, or the ability to regulate thoughts, emotions, and behaviors; (b) self-awareness, or the ability to recognize one's emotions and accurately assess one's strengths and weaknesses; (c) social awareness or awareness of the culture, beliefs, and feelings of the people and world around them; (d) relationship skills or the ability to effectively communicate, work well with peers, and build meaningful relationships; and (e) responsible decision-making or the ability to make plans for the future, follow moral/ethical standards, and

contribute to the well-being (CASEL, 2022). Ross and Tolan (2017) conducted a longitudinal study of sample of 1,717 fifth grade students across their sixth and seventh grade years that indicated the focus on social emotional and learning resulted in positive learning outcomes for the students and found significant validity in the support that SEL lends to positive indicators of functioning for young adolescents. The study found that overall, SEL is positively related to school engagement and grades, and negatively related to risky behaviors, delinquency, and depressive symptom in young adolescents. These results support the notion that social and emotional competencies are importantly linked to outcomes of success and thriving in adolescence (Ross & Tolan, 2017).

Social and emotional learning has been a focus of middle level education within recent years. It is not uncommon for teachers to have received training in SEL and incorporate it within their classrooms and learning experiences. Further, as teachers serve as effective social and emotional role models, the impact of their connection to and caring about student motivation and learning is evident. A study of the association between perception of caring and intrinsic motivation in middle level students indicated that positive social and emotional relationships with teachers and peers serve as the primary motivator for engagement in learning (Reppy & Larwin, 2019). Teachers can design SEL as an intentional part of online teaching. As teacher, Jill Fletcher (2019), states, “SEL is ideally more than a curriculum. It’s a set of thoughtful strategies embedded into everyday classroom activities and norms. In a best-case scenario, students should be given multiple opportunities throughout the school day for practicing self-awareness and self-management, increasing social awareness, building relationship skills, and making responsible decisions.” Building these opportunities as young adolescents work together online is examined in section four of the *online design reflection guide*.

## **Differentiation**

Effective middle level teachers differentiate their instructional design to meet individuals’ diverse needs within an already diverse adolescent population. Skilled middle level teachers have been honing their abilities and expertise in differentiation over the years. Designing instruction that differentiates within an online environment can build on this expertise. Universal design is a framework that illustrates designing lessons to differentiate and accommodate all types of learners (Lidwell et al., 2010). Universal design considers three elements: engagement, representation, and action and expression. Universal engagement and representation gives learners more than one way to interact with learning materials and action/expression allows students choices to demonstrate what they know. Teaching materials, assignments and assessments to are designed to consider diverse learning styles, as well as other factors such as gender, culture, ethnicity, socioeconomic status and personal interests. Differentiation can be designed using four approaches within the learning process, namely, differentiation of content, process, product, and learning environment (Tomlinson, 1999).

When designing an online learning experience, teachers may want to consider including a variety of pathways for students to access and process information, just as they would in a classroom. Online teachers may provide links to materials that are more visually centered, more dependent upon auditory learning, directions for hands-on experiences with materials easily accessed within the household or via simulation of manipulation of materials, information that is presented within reading, viewing, or visual arts, musical and mathematical representations. Students could even self assess their preferred modalities of learning and learning styles and then

choose their own paths across identified domains or preferences set up by the teacher. Teachers can provide experiences that build upon students' cultural assets and lived experiences.

Connections can be made with community members and parents. A variety of assessments may be provided online, all aligned with a common rubric, that allows students to evidence their understanding of their learning in different ways, instead of all students completing a quiz, filling in blanks or going through an online tutorial. Students may choose to present their understandings with videos, with narrated processes, with visual collages, in a group project using Google Docs or Zoom, or by designing their own online lessons to teach peers. The possibilities are endless and may be potentially more engaging and motivating for students to focus on instead of completing what they may perceive to be mundane, easy to grade and record tasks. As teachers design multiple paths within an online learning environment, elements online daily that are consistent, predictable, and inclusive of all students to build a sense of community also need to be present. Just as in a face-to-face classroom this is a never-ending balancing act. The more cognizant teachers are of this balancing act as they design learning online, the more likely they will become effective in online differentiation. Section five of the *online design reflection guide* looks at differentiation in online lessons.

### Implications

The acceleration of movement to online teaching and learning caused by the pandemic and the onslaught of technology in the field of education has been challenging. Underlying this hurried and often not fully supported transition from face-to-face teaching to online classrooms are the professional pedagogical strengths of excellent and veteran teachers of young adolescents. Middle level teachers possess the knowledge necessary to design instruction to promote depth of student understanding, be developmentally responsive, and incorporate social and emotional learning and differentiation to meet individual student needs. Through reflection on their previous online course design, their current and future online teaching can exemplify these best practices. Such reflection may enable middle level teachers to not just refresh but reimagine future online learning, as they gain confidence in their abilities and pedagogical skills to teach and reach young adolescent learners within this new learning environment.

Teachers need to be viewed as designers and decision-makers of learning not only in their face-to-face classrooms but perhaps even more so in the virtual learning world. The pandemic forced role shifts on middle level teachers. Time that was primarily spent in face-to-face classrooms shifted to greater amounts of time being spent in lesson design. Emphasis shifted from directing learning in the classroom to guiding and facilitating learning through intentional online lesson design. Producing grades as accountability often took precedence over relevant feedback to guide further and deeper learning in online classrooms. Covering information and fear of learning gaps were prevalent. Now is the time to breathe, reflect, reimagine and revise approaches to middle level online learning with students, instead of doing it "to them".

Middle level teachers build relationships, design learning, make decisions, respond to students as individual learners, and build student understanding through skillful use of best practices. One can ask, how does my current approach to online learning exemplify and value those skills during and post pandemic? If the almost instant shift to online learning caused teachers to scramble to find premade lessons and center on helping students to navigate them, while teachers recorded student participation and test or quiz scores, now is a chance to reflect

on the limitations of this approach and ask, what do professional educators bring to the online learning enterprise that vendors of prefabricated lessons cannot? Skills and abilities to reach and teach young adolescent learners are essential to effective middle level instruction and professional middle level teachers are the ones who can bring that to life in online environments. Teachers are the value added.

Pre-pandemic studies found that effective online teaching requires teacher expertise at the point where pedagogy, technology, and content intersect (Russell, 2004; Savery, 2005). During the pandemic, figuring out how to navigate technology and cover the curriculum pushed pedagogy out of focus. Teachers have the needed skills and ability to reach young adolescent learners, but good instructional practice in face-to-face settings does not automatically translate to good teaching in online environments (Davis & Roblyer, 2005). The time to reflect upon previous online lessons and to re-imagine how to teach them using best practices needs to be part of moving forward in middle level education to design online learning that is responsive to the nature and identities of young adolescents and that are challenging, empowering, equitable, engaging, and motivating (Bishop & Harrison, 2021). Reflecting on previous online lessons within a framework of best practices may allow middle level teachers to make sure they now consider and use these approaches as they work together to design real learning in the virtual world.

## References

- Association for Middle Level Education. (2010). *This We Believe: Keys to Educating Young Adolescents*. Author.
- Biggs, J., & Collis, K. (1982). *Evaluating the quality of learning: The SOLO Taxonomy*. Academic Press.
- Bishop, P. A., & Harrison, L. M. (2021). *The successful middle school: This we believe*. Association for Middle Level Education.
- Bryson, J. R., & Andres, L. (2020). Covid-19 and rapid adoption and improvisation of online teaching: Curating resources for extensive versus intensive online learning experiences. *Journal of Geography in Higher Education*, 44(4), 608–623.
- CASEL (2022). *Fundamentals of SEL*. Retrieved from: <https://casel.org/fundamentals-of-sel/>
- Davis, N., & Roblyer, M. (2005). Preparing teachers for the “schools that technology built”: Evaluation of a program to train teachers for virtual schooling. *Journal of Research on Technology in Education*, 37, 399-409.
- Diliberti, M., & Schwartz, H. (2021). The rise of virtual schools: Selected findings from the third American school district panel survey. Rand Corporation. Retrieved from: [https://www.rand.org/pubs/research\\_reports/RR956-5.html](https://www.rand.org/pubs/research_reports/RR956-5.html)



- Fletcher, J. (2019). 5 ways to incorporate SEL in middle school. *Edutopia*. Retrieved from: <https://www.edutopia.org/article/5-ways-incorporate-sel-middle-school>
- Gross, B. (2021). Surging enrollment in virtual schools during the pandemic spurs new questions for policymakers. *CREP: Reinventing Public Education*. Retrieved from: <https://crpe.org/surging-enrollment-in-virtual-schools-during-the-pandemic-spurs-new-questions-for-policymakers/>
- Kellough, R. D., & Kellough, N. G. (2008). *Teaching young adolescents: Methods and resources for middle grades teaching* (5th ed.). Pearson.
- Lidwell, W., Holden, K., & Butler, J. (2010). *Universal principles of design* (2nd ed.). Rockport.
- Lockee, B. (2021). Online education in the post-COVID era. *National Electronics*, 4, 5–6. <https://doi.org/10.1038/s41928-020-00534-0>
- NCES (2021). *NCES Data Show Shifts in Mode of Instruction and Health and Safety Strategies at Nation's Public Schools*. [http://nces.ed.gov/whatsnew/press\\_releases/12\\_15\\_2021.asp](http://nces.ed.gov/whatsnew/press_releases/12_15_2021.asp)
- Reppy, D., & Larwin, K. H. (2020). The association between perception of caring and intrinsic motivation: A study of urban middle school students. *Journal of Education*, 200(1), 48–61.
- Ross, K., & Tolan, P. (2017). Social and emotional learning in adolescents: Testing the CASEL model in a normative sample. *Journal of Early Adolescence*, 38(8) 1170-1199.
- Russell, G. (2004). Virtual schools: A critical view. In *Development and Management of Virtual Schools: Issues and Trends*. Catherine Cavanaugh, Ed. IGI Global.
- Savery, J.R. (2005). BE VOCAL: Characteristics of successful online instructors. *Journal of Interactive Online Learning*, 4(2), 141-152.
- Scales, P. (2010). Adolescents thriving: The role of sparks, relationships, and empowerment. *Journal of Youth and Adolescence*, 40(3), 1-15.
- Stevenson, C. (2002). *Teaching ten to fourteen-year olds* (3rd ed.). Allyn & Bacon.
- Think Impact. E-Learning (2022). E-learning statistics. Retrieved from: <https://www.thinkimpact.com/elearning-statistics/#2-k-12-elearning-statistics> September 10, 2022.
- Tomlinson, C. (1999). *The Differentiated Classroom: Responding to the Needs of All Learners*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Trust, T., & Whalen, J. (2020). Should teachers be trained in emergency remote teaching? Lessons learned from the COVID-19 pandemic. *Journal of Technology and Teacher Education*, 28(2), 189–199.

Webb, N. (2005). *Depth-of-Knowledge levels for four content areas*. Presentation to the Florida Education Research Association, 50th Annual Meeting, Miami, Florida.

World Economic Forum (2020). The Covid-19 pandemic has changed education forever.  
<https://www.weforum.org/agenda/2020/04/coronavirus-education-global-covid19-online-digital-learning/>

## Appendix A. Online Design Reflection Guide.

### **Online Design Reflection Guide**

Rating Scale: Not at all: 0 Very Little: 1 Some: 2 Mostly: 3 Exclusively: 4

#### **Depth of content knowledge/DOK**

My online lessons have:

1. Tasks that focus on recalling and reproducing content data, definitions, details, facts, information, and procedures \_\_\_\_\_
  2. Tasks that focus using content concepts and skills to answer questions, address problems, accomplish tasks, and analyze texts and topics \_\_\_\_\_
  3. Tasks that focus on thinking strategically about how and why content concepts, operations, and procedures can be used to attain and explain answers, conclusions, decisions, and results \_\_\_\_\_
  4. Tasks that focus thinking extensively about content in terms of what else can be done, how else can learning be used, and how could the student personally use what they have learned in different academic and real-world contexts \_\_\_\_\_
- (the target is to have lower scores for number 1 and 2 and higher scores for number 3 and 4)

#### **Depth of understanding/SOLO**

My online lessons have:

5. Tasks that show students understand how to identify, name things and follow a simple procedure \_\_\_\_\_
  6. Tasks that show students understand how to combine, describe, list or perform steps in sequence \_\_\_\_\_
  7. Tasks that show students understand how to analyze, apply, argue, compare, explain, relate, justify \_\_\_\_\_
  8. Tasks that show students understand how to create, generate, reflect, hypothesize, theorize \_\_\_\_\_
- (the target is to have lower scores on number 5 and 6 and higher scores on number 7 and 8)

#### **Developmental Responsiveness/AMLE**

My online lessons have:

9. A variety of educational approaches, materials, and paths to address young adolescent diversity \_\_\_\_\_
  10. Tasks that are meaningful for young adolescents and provide opportunities for exploration as students interact directly with their world through discourse and hands-on experiences addressing real life concepts and issues \_\_\_\_\_
  11. Tasks that foster critical thinking skills as related to higher levels of moral reasoning \_\_\_\_\_
  12. Tasks that help students to belong and form affirming and healthy relationships with peers through collaborative experiences to interact productively with peers \_\_\_\_\_
- (the target is to have higher scores for all, numbers 9-12)

#### **Social Emotional Development /CASEL**

My online lessons have :

13. Learning that promotes self-awareness to understand one's own emotions, thoughts, and values and how this affects one's choices \_\_\_\_\_
14. Learning that promotes self-management to manage one's emotions, thoughts, and make decisions to achieve one's goals and aspirations \_\_\_\_\_

15. Learning that promotes social awareness to understand the perspectives of and empathize with others, including those from diverse backgrounds, cultures, and contexts \_\_\_\_\_
16. Learning that promotes relationship skills to have maintain healthy and supportive relationships with diverse individuals and groups through communication, interaction, and collaborative problem solving \_\_\_\_\_
17. Learning that promotes responsible decision-making to make caring and constructive choices about personal choices and social interactions considering consequences that actions have for the student and their peers and making reasoned judgments after analyzing information, data, and facts \_\_\_\_\_

*(the target is to have higher scores for all, numbers 13-17)*

#### **Differentiation/Tomlinson**

##### My online lessons have:

18. Teaching materials, assignments and assessments that consider diverse learning styles and abilities as well as other factors such as gender, culture, ethnicity, socioeconomic status and personal interests \_\_\_\_\_
19. Multiple choices for students in terms of content, process or product \_\_\_\_\_
20. Learning opportunities such as tiered assignments, group work based on learning styles, flexible groupings, layered curriculum, independent projects, student feedback systems, game-based learning, interactive discussions, or hands-on activities \_\_\_\_\_

##### **Appendix a**

*(the target is to have higher scores for all, numbers 18-20)*