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Lesson Study: A Proposed Intervention for Professional Development of Diversity, Equity, and Inclusion Instruction in a Multicultural Classroom

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Abstract

This paper responds to the proposed implementation of lesson study as a professional development intervention for multicultural instruction in the United States. It includes an investigation of the literature in relation to the use of higher-order thinking skills, Banks's four approaches for integrating multicultural instruction, and lesson study as a proposed professional development intervention in multicultural instruction. The conclusion provides a discussion of insights into K–12 educators' needs for professional development opportunities to ensure that they provide diverse, equitable, and inclusive learning environments for all of their students. Creating diverse, equitable, and inclusive learning opportunities for students would be meaningful social change.

Keywords: *lesson study, higher-order thinking, diversity, equity, inclusion*

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Introduction

This paper includes a discussion of the proposed implementation of lesson study as a professional development intervention for multicultural instruction in the United States. The first goal is to explore the literature and define higher-order thinking skills (Anderson & Krathwohl, 2001; Armstrong, 2020; Bloom, 1956; Francis, 2016; Hjerm et al., 2018; Webb, 1997, 1999, 2005) and to investigate Banks's (2008, 2019) four approaches to integrating multicultural content in the core curriculum. Second, an exploration of recent literature illustrates ways in which K–12 educators are not implementing Banks's (2008, 2019) social approach to increase higher-order thinking skills as is required and do not provide equal learning opportunities to all students in their daily instructional practice (Anderson & Krathwohl, 2001; Armstrong, 2020; Balkaran & Roberts, 2019; Francis, 2016; Hjerm et al., 2018; Robles de Melendez & Beck, 2019; Sleeter & Flores Carmona, 2017). Third, an evaluation is undertaken of the literature on lesson study to establish whether lesson study is an appropriate approach to professional development that can support K–12 educators' quest to increase students' use of higher-order thinking skills and to bring learning opportunities to

all students (Anderson & Krathwohl, 2001; Bloom, 1956; Corwin et al., 2020; Takahashi & McDougal, 2016; Webb, 1997, 1999, 2005). This paper reports a professional development intervention, following Banks's (2008, 2019) social action approach, that provides an opportunity for K–12 educators to incorporate higher-order thinking skills into their daily instructional practices (Anderson & Krathwohl, 2001; Armstrong, 2020; Francis, 2016; Hjerm et al., 2018). Incorporating Banks's (2008, 2019) social action approach into daily instructional practices may produce learning opportunities that are diverse, equitable, and inclusive for all students.

Higher-Order Thinking Skills and the Social Action Approach

The intent of a multicultural approach to education is to provide equitable learning opportunities to students of different racial, ethnic, cultural, and socioeconomic groups through curricula and instructional strategies that create critical and reflective citizens who can transform society (Howe & Lisi, 2020; Robles de Melendez & Beck, 2019; Sleeter & Flores Carmona, 2017). Students can become critical and reflective citizens through the examination of racial, ethnic, cultural, and socioeconomic groups using different sources and perspectives. In this way, students acquire the skills they need to analyze and evaluate varying sources and perspectives on racial, ethnic, cultural, and socioeconomic groups from educators who can challenge students to use higher-order thinking skills as part of the curricula.

If students are to succeed in understanding how to use higher-order thinking skills and transform a multicultural society, educators must actively teach higher-order thinking skills as part of the curricula consistently throughout the school year (Banks, 2008, 2019). One problem with this approach, however, is that many educators provide students with instruction for lower-order thinking skills but neglect to teach higher-order thinking skills (Balkaran & Roberts, 2019; Robles de Melendez & Beck, 2019; Sleeter & Flores Carmona, 2017). Neglect to teach higher-order thinking may lead to student skills merely consisting of recollecting and reciting facts or details (Anderson & Krathwohl, 2001; Armstrong, 2020; Bloom, 1956; Francis, 2016; Hjerm et al., 2018; Webb, 1997, 1999, 2005). However, teaching higher-order thinking gives students the opportunity to examine problems and determine solutions. Students who have the intellectual ability to identify a problem and act to solve it form the premise of Banks's (2008, 2019) social action approach in multicultural education.

Higher-Order Thinking Skills

The emergence of higher-order thinking skills has been the topic of much study (Anderson & Krathwohl, 2001; Armstrong, 2020; Bloom, 1956; Francis, 2016; Hjerm et al., 2018; Webb, 1997, 1999, 2005). Bloom's (1956) taxonomy gave the original application of higher-order thinking skills in the K–12 educational context. Bloom's (1956) taxonomy was oriented into a six-level arrangement: (a) knowledge, (b) comprehension, (c) application, (d) analysis, (e) synthesis, and (f) evaluation. The levels of Bloom's taxonomy began with the lowest levels of thinking skills, those focused on the simplest of tasks, such as recall. The level of comprehension entails summarizing and classifying information. Application involves the ability to use information to follow a procedure. Analysis entails breaking information into smaller parts. Synthesis is acting on information to create something new. Bloom's taxonomy rises with increasing difficulty until the highest level of thinking, evaluation, is reached. Evaluation focuses on the most complex tasks, such as making judgments on complex information. Bloom's taxonomy is the starting point for educators seeking to design higher-level learning opportunities for students and enable them to develop critical thinking skills and make the necessary decisions to solve problems.

Anderson and Krathwohl (2001) revised and updated Bloom's (1956) original taxonomy with two major revisions. First, Anderson and Krathwohl altered the names of the levels from nouns to verbs. Anderson and Krathwohl's levels are (a) remember, (b) understand, (c) apply, (d) analyze, (e) evaluate, and (f) create.

Second, Armstrong (2020) indicated that Anderson and Krathwohl's taxonomy entailed a reversal of the evaluation/evaluate and synthesis/create levels from Bloom's original taxonomy. Anderson and Krathwohl revised and updated Bloom's taxonomy for two reasons. First, they considered that the evaluate level should come before the create step because it entails making a judgment on information. The create level should be the highest level of thinking because here, people act on their judgment from the previous level. Anderson and Krathwohl's update thus gives educators the ability to reflect on the reversal of the evaluate and create levels to consider how these changes can be applied to instructional practice. Educators have the obligation to give students the opportunity to form a judgment at the evaluate level before deciding how to create or act on something based on the given task.

Webb (1997, 1999, 2005) added to the study of higher-order thinking skills with the concept of depth of knowledge (DOK). Francis (2016) found a critical difference in Webb's research, with the focus on understanding how deeply students can assess information on standardized tests and apply that information to real-life situations. Bloom's (1956) taxonomy and Anderson and Krathwohl's (2001) revision focused on the rigor of the instruction found in the teaching lessons. Additionally, Webb's DOK has four levels. DOK level 1 incorporates recalling and defining facts. DOK level 2 requires DOK level 1 information to answer questions. DOK level 3 involves the use of information in planning and justification to solve complex problems. DOK level 4 entails extending thinking to deal with real-life problems. Webb's DOK also allows educators to create lessons in which students can use critical thinking skills to solve real-life problems in ways that are diverse, equitable, and inclusive for everyone involved.

Banks's Four Approaches for Integrating Multicultural Curriculum

As with the study of higher-order thinking skills (Anderson & Krathwohl, 2001; Armstrong, 2020; Francis, 2016; Hjerm et al., 2018), Banks's (2008, 2019) research on the four approaches to the integration of multicultural curricula supports the need for students to develop and employ rigorous higher-order thinking skills. Banks's research found that most K–12 educators use instructional strategies that function at lower levels of integration for multicultural curricula. However, those K–12 educators who offered instruction to students that provided them with thinking skills at the highest level of the spectrum developed in them the ability to make critical decisions on content and make positive changes for different racial, ethnic, cultural, and socioeconomic groups.

Banks's (2008, 2019) four approaches to integrating multicultural education curricula are (a) the contributions approach, (b) the additive approach, (c) the transformative approach, and (d) the social action approach. The contribution approach falls at the lowest level of multicultural curricular integration. A common characteristic of the contributions approach is a focus on cultural holidays and ethnic heroes. This contributions approach is limited in that the different cultural holidays and ethnic heroes celebrated are, with rare exceptions, not part of the mainstream curricula. For example, the heroes Martin Luther King Jr., Cesar Chavez, and Harvey Milk are limited to classroom instruction during their specific day or days and are not mentioned again during the school year. Because there are, on average, 180 instructional days per school year in the United States and approximately 21 ethnic or cultural holidays, this translates to a maximum of 11.7% of classroom instruction attending to perspectives outside the mainstream. Here, the additive approach is an improvement over the contribution approach. This approach includes ethnic heroes and characters as part of core curricula. However, overall, the curriculum in this case still focuses on the mainstream perspective. The third level, called the transformative approach, entirely restructures the curriculum to allow perspectives from different racial, ethnic, cultural, and socioeconomic groups to be part of classroom instruction. In the final level, the social action approach incorporates all the previous components. Ultimately, the main difference between the social action approach and the transformative approach is that students can gather and evaluate information from the perspectives of racial, ethnic, cultural, and socioeconomic groups and make a judgment or act based on the information.

Hjerm et al. (2018) supported Banks's (2008, 2019) claim that students are more critical and reflective citizens when exposed to higher-order thinking skills over the course of the school year. Hjerm et al. wrote that "not only [do] critical thinking skills promote better academic results, [they] also clearly [help] to fulfill the other important task of the schooling system, namely, to foster citizens who can participate in the increasingly heterogeneous societies of today" (p. 56). Furthermore, Hjerm et al. noted that critical thinking results in students who have "the ability to move beyond stereotypes and prejudice" (p. 56) when confronted with racial, ethnic, cultural, and socioeconomic groups different from their own. Teachers fully trained in cultural diversity pedagogy, such as culturally responsive instructional strategies, must give students multiple learning opportunities to use higher-order thinking skills to solve problems when responding to challenging topics about diversity, equity, and inclusion.

Failure to Meet Higher-Order Thinking Skills and the Social Action Approach

Thanks to the literature that indicates that higher-order thinking (Alismail, 2016; Hjerm et al., 2018; Moreno, 2015) and Banks's (2008, 2019) social action approach have a positive influence on student learning opportunities and promote diversity, equity, and inclusion in the school and the community, one might assume that all educators would adopt instructional strategies that could encourage higher-level critical thinking. However, insights in recent literature suggest many educators do not follow instructional approaches that would encourage higher-level thinking skills in the way that the social action approach would do (Atwater et al., 2017; Balkaran & Roberts, 2019; Banks, 2008, 2019). Instead, most educators use instructional approaches that encourage lower-level thinking skills as well as Banks's (2008, 2019) contribution, additive, and transformative approaches (Atwater et al., 2017; Balkaran & Roberts, 2019). Because many educators neglect higher-level thinking skills (Atwater et al., 2017; Balkaran & Roberts, 2019) and Banks's (2008, 2019) social action approach, many students are not given opportunities to develop appropriate critical thinking skills and, thus, cannot make critical decisions regarding solving problems related to a given task.

Many studies concluded that educators are using instructional approaches that encourage lower-level thinking skills (Atwater et al., 2017; Balkaran & Roberts, 2019), such as Banks's (2008, 2019) contribution, additive, and transformative approaches. Balkaran and Roberts (2019) studied the use of three children's book series found in a third-grade classroom, namely, the Boxcar Children series, published between 1942 and 1960; the Bailey School Kids series, published between 1991 and 1992; and the Franklin School Friends series, published between 2014 and 2016. Balkaran and Roberts found that "a majority of popular elementary series continue to thwart the healthy construction of identity for underrepresented students" (p. 78). Most of the protagonist characters in the three series exhibited mainstream perspectives (White), and the narratives rarely included protagonists from other cultural or ethnic groups. To encourage higher-level thinking skills and Banks's (2008, 2019) social action approach, study of children's book series called for books in the classroom to expose students to multicultural perspectives "with realistic images of all ethnicities, families, communities, and cultures in order to meet the needs of today's diverse demographics" (Balkaran & Roberts, 2019, p. 78). Castagno's (2013) study presented a similar conclusion, indicating that, if the perspectives educators offer in their classroom instruction are only those of the mainstream cultural group, they limit students' ability to achieve equity, justice, and democracy in the classroom and the community. Because of the diverse student population currently found in classrooms, educators must incorporate core content instructional materials that represent schools' current demographics.

Atwater et al. (2017) conducted a qualitative case study of 20 black science teachers to examine the challenges faced in implementing the instructional strategies for multicultural education, equity, and social justice in their teaching practices. Atwater et al. discovered that most of the science curriculum focused on the

mainstream perspective of White male scientists. The perspectives of other cultural and ethnic groups and of women were absent from most science curriculum materials. Groski and Swalwell (2015) showed that, so long as educators instruct from a monolingual perspective, students will feel marginalized and wonder why no serious effort is made to include analytical discussions from different perspectives in relation to other cultural and ethnic groups. Groski and Swalwell (2015) indicated that "we can avoid these pitfalls by building our multicultural curriculum efforts, not around cultural awareness or cultural diversity, but around the cultivation of equity literacy in both ourselves and our students" (p. 40). Here, as well, educators are failing to create diverse, equitable, and inclusive opportunities for students. Educators continue to follow core content curricula that focus on only one perspective and viewpoint.

Vavrus and Ozcan (1998) conducted a qualitative study of 95 cooperating teachers in relation to the integration of Banks's (2008, 2019) multicultural education into their classroom instruction. Their data indicate that 74% of the teachers reported using more than one instructional approach (Vavrus & Ozcan, 1998). Vavrus and Ozcan noted that most teachers followed a contribution approach or an additive approach. The transformative approach and the social action approach are rarely seen in classroom instruction. Vavrus and Ozcan contended that the most frequent reason why teachers use the lower levels of Banks's multicultural education integration approaches in their instruction is that those levels already formed part of the curriculum and were easier to teach. Vavrus and Ozcan found that most teachers consider the implementation of the transformative approach and the social action approach to be challenging and necessitating years to redesign the curriculum. Educators' failures to update the core content curricula to reflect the diverse needs of the current student demographic population leave many students disadvantaged. Thus, many students lack exposure to their curricula from different cultural perspectives. As a result, the students are not able to make conclusions that meet the needs of all individuals and that are diverse, equitable, and inclusive.

Educators can use a social action approach (Banks, 2008, 2019) in their classroom instruction to ensure equal opportunities for all students. Nieto (2010) found that when educators and students form a learning community that has the common goal of analyzing core content from different cultural and ethnic group perspectives and adopting the intention of extending learning beyond the classroom, the objective of achieving diversity, equity, and inclusion for all students becomes a possibility. Groski and Swalwell (2015) indicated that five principles must be incorporated into the curriculum to achieve diversity, equity, and inclusion in classroom instruction. First, equity literacy must be part of every core content subject at the school. Second, equity literacy education must be integrative and interdisciplinary. Third, all K–12 students must have guidance to support equity literacy. Fourth, students from all backgrounds require equity literacy. Finally, teaching about equity literacy develops students' social justice skills. Educators who incorporate higher-level thinking skills (Atwater et al., 2017; Balkaran & Roberts, 2019; Castagno, 2013; Cho, 2017; Darling-Hammond, 2010; Groski, 2016a, 2016b; Nieto, 2010) and Banks's (2008, 2019) social action approach into their instructional practices can provide their students with opportunities to develop the necessary critical thinking skills to make decisions that can resolve problems in ways that are diverse, equitable, and inclusive.

Lesson Study: A Proposed Intervention for Professional Development

To accomplish the goal of multicultural education through the routine use of higher-level thinking skills (Atwater et al., 2017; Balkaran & Roberts, 2019) and through Banks's (2008, 2019) social action approach in classroom instruction, K–12 educators require a professional development structure that ensures accountability for diverse, equitable, and inclusive education for all students. One proposed professional development structure for K–12 educators that could ensure accountability for a diverse, equitable, and inclusive education for all students is that of lesson study (Lesson Study Group at Mills College, 2020b). This technique gives K–12 educators a professional development approach that focuses on three critical

components for success in the multicultural classroom: (a) learning stance, (b) shared ownership and responsibility, and (c) emphasis on students, not the teacher. A learning stance gives K–12 educators the opportunity to work as a team of equals to solve instructional problems. Second, shared ownership and responsibility affords K–12 educators the opportunity to co-own each study lesson, as each is co-owned by each team member, and each team member has an equal voice during the lesson-study cycle. Finally, the lesson-study process focuses on the student instead of the teacher, the opposite of most traditional professional development approaches. A K–12 educator may observe students in a classroom setting and determine student learning using classroom observation. The three key components of lesson study will include a framework as a guide for K–12 educators to create an instructional program that enables all students to receive an education that is diverse, equitable, and inclusive. K–12 educators may establish a shared vision for student learning across grade-level or subject-matter departments to build a coherent pattern of instruction.

Lesson-Study Process

The lesson-study cycle (Lesson Study Group at Mills College, 2020a) consists of four stages. First is the study stage, during which K–12 educators work as a team to "(a) identify long-term goals for students, (b) choose the subject and unit to investigate, and (c) study standards, research, and curricula" (para. 3). Second is the plan stage, where K–12 educators plan a lesson based on research conducted during the study phase and seek data regarding the observed lesson. Third is the teach stage, where one team member teaches the planned lesson, and the rest of the team observes it "to record student thinking and learning" (Lesson Study Group at Mills College, 2020a, para. 5). Last is the reflect stage, where K–12 educators use data on student thinking and learning to reflect on what the team learned in the lesson study cycle and make plans regarding lesson adjustments for the next lesson-study cycle. Lesson Study Group at Mills College found that educators who participate in this cycle can examine their instructional practices to determine whether their instructional practices meet the current needs of their students. Educators could gain new insights into implementing lessons that are diverse, equitable, and inclusive.

Lesson Study as Professional Development

The results of many examinations of lesson study indicate the success of the professional development approach for enabling K–12 educators to perform in-depth examination of instructional practices, student thinking, and student learning (Corwin et al., 2020; Fernandez & Chokshi, 2002; Fernandez & Yoshida, 2012; Lewis & Perry, 2017; Takahashi & McDougal, 2016). Lewis and Perry (2017) conducted a quantitative study among 39 K–12 mathematics educator teams across the United States over a 3-month period. Lewis and Perry discovered that when the educators have access to research-based resources and a lesson-study approach to examine student thinking and student learning, they brought this knowledge to bear in a way that also took advantage of their years of teaching experience, increasing educator and student knowledge in relation to mathematical problems of fractions. The K–12 educators used lesson study to take ownership of their professional development and benefit instructional practices and student learning. As a result, the K–12 educators create and develop lessons that are diverse, equitable, and inclusive for all students.

Fernandez and Chokshi (2002) studied the effects of lesson study on teachers in the United States and found that teachers (a) increased their knowledge base, (b) decreased teaching in isolation, (c) increased their learning, and (d) became agents of social change within their schools. For schools seeking to become more multiculturally oriented, the implementation of lesson study showed the social change needed to bring teachers together to collaborate and make the changes necessary to increase higher-level thinking skills (Anderson & Krathwohl, 2001; Armstrong, 2020; Francis, 2016; Hjerm et al., 2018) and a social action approach (Banks, 2008, 2019) to ensure the curriculum and school experience is diverse, equitable, and inclusive.

Takahashi and McDougal (2016) investigated five K–8 urban public schools and their use of lesson study to adapt to the implementation of the Common Core Mathematics Teaching Standards. This investigation took place over five years. It was found that, for lesson study to be successful, the team must have a clear purpose in relation to instructional practices, student thinking, and student learning. This purpose allowed for achievable objectives. At the end of the 5-year study, schools that successfully sustained the practice of lesson study had greater student achievement. Additionally, a proposed intervention of lesson study for developing higher-level thinking skills (Anderson & Krathwohl, 2001; Armstrong, 2020; Francis, 2016; Hjerm et al., 2018) and Banks's (2008, 2019) social action approach to stimulate student learning and problem-solving skills could yield similar results.

Thus, lesson study is an effective professional development option for K–12 educators seeking to create an instructional program that includes higher-level thinking skills (Anderson & Krathwohl, 2001; Armstrong, 2020; Francis, 2016; Hjerm et al., 2018) and Banks's (2008, 2019) social action approach, ensuring all students receive an education that is diverse, equitable, and inclusive. Lesson study would give K–12 education the opportunity to function as a collaborative team to study, plan, teach, and reflect. A lesson study team can focus on core content and ensure that it incorporates different ethnic and cultural perspectives and that it can encourage students to make critical decisions about (act upon) the core content. As noted by Hixon (2009), one of the most important aspects of working together as a lesson-study team is the surprising and unexpected discoveries made during the teach and reflect stages. For K–12 educators focusing on creating a multicultural instructional program, a lesson-study team may be able to make discoveries on how to create a curriculum more diverse, equitable, and inclusive by observing students' thinking and learning, as well as by discussing data from the observations that focus on students' thinking and learning.

Lesson study is itself a diverse, equitable, and inclusive instructional program, as it follows the components of a culturally responsive pedagogy. Ladson-Billings (1994) defined culturally responsive pedagogy as one that acknowledges, responds to, and celebrates all students' cultures and ensures equitable educational opportunities. Here, a culturally responsive pedagogy is only effective when references that bear on all cultural groups are part of core content instruction and when students have opportunities to make critical decisions regarding core contents. If a lesson study cycle is part of creating an instructional program that is diverse, equitable, and inclusive, a culturally responsive pedagogy, higher-order thinking skills (Anderson & Krathwohl, 2001; Armstrong, 2020; Francis, 2016; Hjerm et al., 2018), and Banks's (2008, 2019) social action approach all become possible for daily classroom instruction.

Conclusion

This paper included exploration of the literature on higher-order thinking skills (Anderson & Krathwohl, 2001; Armstrong, 2020; Bloom, 1956; Francis, 2016; Hjerm et al., 2018; Webb, 1997, 1999, 2005), Banks's (2008, 2019) four approaches to integrating multicultural instructional strategies, the current state of multicultural education in classrooms in the United States, and the possible implementation of the lesson-study approach as an intervention for professional development in multicultural education to determine whether lesson study could be a solution that would ensure the integration of higher-order thinking skills (Anderson & Krathwohl, 2001; Armstrong, 2020; Corwin et al., 2020; Francis, 2016; Hjerm et al., 2018; Lewis & Perry, 2017; Takahashi & McDougal, 2016) and Banks's (2008, 2019) social action approach. To test the proposal of lesson study and its practical application for multicultural lessons, educational researchers could conduct a qualitative study to provide additional insights into how educators could ensure that their daily classroom lessons would integrate higher-order thinking skills (Anderson & Krathwohl, 2001; Armstrong, 2020; Francis, 2016; Hjerm et al., 2018) and Banks's (2008, 2019) social action approach. Qualitative study may uncover additional instructional strategies and professional development opportunities that could improve the structure of multicultural education in the United States.

After the implementation of lesson study, a change in mindset may follow, moving from a school culture in which many educators teach multicultural lessons using lower-level thinking skills to one where educators incorporate higher-level thinking skills (Atwater et al., 2017; Balkaran & Roberts, 2019; Groski, 2016a, 2016b) and Banks's (2008, 2019) social action approach as routine parts of their instructional plan and cause social change. Such social change could be the desired result of creating diverse, equitable, and inclusive learning opportunities for students. In this context, educators would shift from following the mainstream perspective on core content to integrating perspectives from different ethnic and cultural groups in that core instruction. A school culture would also be created that would benefit the students, who would obtain learning opportunities to explore core content from the perspective of many different ethnic and cultural groups perspectives. As a result, students could use their knowledge of higher-order thinking skills (Anderson & Krathwohl, 2001; Armstrong, 2020; Bloom, 1956; Francis, 2016; Hjerm et al., 2018; Webb, 1997, 1999, 2005) and Banks's (2008, 2019) social action approach to make critical decisions on the core instructional content and make better decisions in their communities when interacting with those whose ethnic or cultural backgrounds are different from their own.

References

Alismail, H. A. (2016). Multicultural education: Teachers' perspectives and preparation. *Journal of Education and Practice*, *7*(11), 139–146. https://doi.org/10.26803/ijlter.19.2.8

Anderson, L. W., & Krathwohl, D. R. (2001). *A taxonomy for learning, teaching, and assessing: A revision of Bloom's taxonomy of educational objectives*. Longmans.

Armstrong, P. (2020, December 17). *Bloom's taxonomy*. Vanderbilt University. https://cft.vanderbilt.edu/guides-sub-pages/blooms-taxonomy/

Atwater, M., Butler, M., Freeman, T., & Parsons, E. (2017). An examination of black science teacher educators' experiences with multicultural education, equity, and social justice. *Journal of Science Teacher Education*, *24*(8), 1293–1313. https://doi.org/10.1007/s10972-013-9358-8

Balkaran, S. M., & Roberts, S. K. (2019). Equity audits of ethnicity in three transitional series: Moving toward diverse series books for today's young readers. *International Journal of the Whole Child*, *4*(2), 64–81. https://libjournals.mtsu.edu/index.php/ijwc/article/view/1600/1125

Banks, J. A. (2008). *Teaching strategies for ethnic studies* (8th ed.). Pearson.

Banks, J. A. (2019). *An introduction to multicultural education* (6th ed.). Pearson.

Bloom, B. S. (1956). *Taxonomy of educational objectives: A classification of educational goals*. Longmans.

Castagno, A. (2013). Multicultural education and the protection of whiteness. *American Journal of Education*, 120(1), 101–128. https://doi.org/10.1086/673121

Cho, H. (2017). Navigating the meanings of social justice, teaching for social justice, and multicultural education. *International Journal of Multicultural Education*, *19*(2), 1–19. http://dx.doi.org/10.18251/ijme.v19i2.1307

Corwin, S., Cascio, M., Emerson, K., Henn, L., & Lewis, C. (2020). Investigating using lesson study. *Mathematics Teacher: Learning & Teaching PK–12*, *113*(5), 375–382. https://pubs.nctm.org/view/journals/mtlt/113/5/article-p375.xml

Darling-Hammond, L. (2010). *How America's commitment to equity will determine our future*. Teachers College Press.

Fernandez, C., & Chokshi, S. (2002). A practical guide for translating lesson study for U.S. *Phi Delta Kappan*, *84*(2), 128–134. https://doi.org/10.1177/003172170208400208

Fernandez, C., & Yoshida, M. (2012). *Lesson study: A Japanese approach to improving mathematics teaching and learning*. Lawrence Erlbaum Publishers.

Francis, E. (2016). *Now that's a good question: How to promote a cognitive rigor through classroom questioning*. ASCD.

Groski, P. (2016a). Making better multicultural and social justice teacher educators: A qualitative analysis of the professional learning and support needs of multicultural teacher education faculty. *Multicultural Education Review*, *8*(3), 139–159. https://doi.org/10.1080/2005615X.2016.1164378

Groski, P. (2016b). Rethinking the role of "culture" in educational equity: From cultural competence to equity literacy. *Multicultural Perspectives*, *18*(4), 221–226. https://doi.org/10.1080/15210960.2016.1228344

Groski, P., & Swalwell, K. (2015). Equity literacy for all. *Culturally Diverse Classrooms*, *72*(6), 34–40. http://www.ascd.org/publications/educational-leadership/mar15/vol72/num06/Equity-Literacy-for-All.aspx

Hixon, M. (2009). Lesson study: A proposed intervention for professional development and student achievement [Unpublished doctoral dissertation, Walden University]. ProQuest Dissertations and Theses database. (UMI No. 3379820)

Hjerm, M., Seva, I., & Werner, L. (2018). How critical thinking, multicultural education and teacher qualification affect anti-immigrant attitudes. *International Studies in Sociology in Education*, *27*(1), 42–59. https://doi.org/10.1080/09620214.2018.1425895

Howe, W., & Lisi, P. (2020). *Becoming a multicultural educator: Developing awareness, gaining skills, and taking action* (3rd ed.). Sage.

Ladson-Billings, G. (1994). *The dreamkeepers*. Jossey-Bass Publishing Co.

Lesson Study Group at Mills College. (2020a, December 17). *What is lesson study?* Mills College. https://lessonresearch.net/about-lesson-study/what-is-lesson-study/

Lesson Study Group at Mills College. (2020b, December 17). *Why lesson study?* Mills College. https://lessonresearch.net/about-lesson-study/why-lesson-study/

Lewis, C., & Perry, R. (2017). Lesson study to scale up research-based knowledge: A randomized, controlled trial of fractions learning. *Journal for Research in Mathematics Education*, *48*(3), 261. https://doi.org/10.5951/jresematheduc.48.3.0261

Moreno, M. (2015). How I use multicultural education to impact student learning and develop critical thinking skills. *Multicultural Perspectives*, *17*(3), 152–154. https://doi.org/10.1080/15210960.2015.1053322

Nieto, S. (2010). *The light in their eyes: Creating multicultural learning communities* (10th ed.). Teachers College Press.

Robles de Melendez, W., & Beck, V. (2019). *Teaching young children in multicultural classrooms* (5th ed.). Cengage.

Sleeter, C., & Flores Carmona, J. (2017). *Un-standardizing curriculum: Multicultural teaching in the standards-based classroom* (2nd ed.). Teachers College Press.

Takahashi, A., & McDougal, T. (2016). Collaborative lesson research: Maximizing the impact of lesson study. *ZDM*, 1–14. https://link.springer.com/article/10.1007/s11858-015-0752-x

Vavrus, M., & Ozcan, M. (1998). Multicultural content infusion by student teachers: Perceptions and beliefs of cooperating teachers. In M. E. Dilworth (Ed.), *Being responsive to cultural differences: How teachers learn* (pp. 94–109). Sage.

Webb, N. (1997). *Research monograph number 6: Criteria for alignment of expectations and assessments on mathematics and science education*. CCSSO.

Webb, N. (1999). *Research monograph No. 18: Alignment of science and mathematics standards and assessments in four states*. CCSSO.

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