Removing Barriers to Teaching Students with Autism Spectrum Disorder Using Fiction with Preservice Teachers

Amelia G. Spencer[1], Gay F. Barnes[1], Louanne Jacobs[1]

[1] Birmingham-Southern College, US

ABSTRACT:

This comprehensive mixed-methods study sought to investigate the impact of integrating contemporary Young Adult (YA) literature into an introductory-level special education survey course. The primary objectives were to assess whether this integration led to significant improvements in both academic cognitive knowledge and empathetic knowledge regarding individuals with Autism Spectrum Disorder (ASD).

The study involved 135 undergraduate students enrolled in this course between fall of 2016 and spring of 2020. To gauge the effects of YA literature on their perceptions and insights, participants were required to complete a questionnaire containing four open-ended questions. These responses were subjected to a rigorous analysis employing both quantitative and qualitative methods. Additionally, participants were asked to provide feedback through a student satisfaction survey, which was assessed using a 5-point Likert scale.

The findings of this research provide compelling evidence that the integration of YA realistic fiction into the college classroom significantly enhances students' academic cognitive knowledge and fosters a deeper empathetic understanding of individuals with ASD.

Keywords: Autism Spectrum Disorder, Preservice Teachers, Young Adult Fiction

INTRODUCTION

Across the globe, many barriers stand in the way of providing an inclusive education to all children with exceptionalities. These barriers often include physical accessibility within schools, but equally damaging are the barriers that include low expectations, ostracizing individuals with exceptionalities, and negative attitudes towards individuals with exceptionalities. The United Nations Convention on the Rights of Persons with Disabilities (CRPD) Article 24, the Universal Right to Education, supports that children with disabilities across the globe should not only have access to the general education system (UN, 2016) but that this education should happen in a non-discriminatory environment (De Beco, 2017). Further, Article 24 supports the goal of removing barriers to an education that will allow people with disabilities a sense of dignity and a greater opportunity to be full members of society (Kanter, 2019). Progress towards this aim has been made, but much work is yet to be done.

Little research is available about the education of individuals with autism spectrum disorder (ASD) globally (Wei et al., 2014). ASD is a developmental disability that impacts social communication and behavior. Characteristics of those with ASD, including difficulties with social interaction and restrictive behaviors, can make functioning in a classroom difficult (Wei et al., 2014). According to the Center for Disease Control (CDC), (CDCP, 2020) the rate of ASD in the United States is 1 in 36 individuals with 1 in 160 individuals diagnosed worldwide (Zeidan et al., 2022). International initiatives such as the Inclusive Education Initiative (IEI) (WB, 2019) work to support countries in making education more inclusive. Preparing teachers who are equipped to teach all children with disabilities, such as ASD, is a critical part of ensuring classrooms are equitable, accessible spaces that provide quality education experiences for all learners (Teachers, 2021).

Inclusion of all learners in educational settings remains a global challenge for general classroom teachers, special educators, and the teacher educators who prepare them (Cook, 2002; Shade & Stewart, 2001). Andrews (1998) noted that many researchers have found the key to successful inclusion is the teacher's attitude toward learners with exceptionalities. A key attribute of teacher attitude leading to student learning is a sense of empathy (Meyers et al., 2019). Meyers also notes that teacher empathy occurs when the teacher works to understand the student, cares for the student, and communicates their caring to students through their actions. Robertson et al. (2003) also noted that when teachers perceived they had a positive relationship with students with autism, students exhibited stronger relationships within the classroom and had fewer behavior problems.

Teaching to ensure equity demands both academic cognitive knowledge and empathetic knowledge. Hughes et al. (2014) found that preservice teachers' schema for academic cognitive knowledge about individuals with ASD increased after reading Young Adult (YA) literature featuring characters with ASD and participating in digital discussions about their reading.

This study sought to expand on the work of Hughes et al. (2014) and explore the effects of using contemporary YA realistic fiction literature, coupled with more traditional instructional strategies, on undergraduates' academic cognitive and empathetic knowledge of students with ASD. Results suggest that strategic and purposeful use of YA realistic fiction interwoven within a preservice education course can meet both of these demands, supplementing content knowledge while providing opportunities for increasing affect through perspective-taking characteristic of realistic fiction reading (Prater et al., 2006). The research sought to answer two questions: 1. Does the use of contemporary YA realistic fiction featuring characters with ASD result in increased academic cognitive knowledge? and 2. Does the use of contemporary YA realistic fiction featuring characters with ASD result in increased empathetic knowledge?

Theoretical Framework

This study is situated within the framework of Louise Rosenblatt's Transactional Literacy Theory. Rosenblatt posited that readers adopt one of two stances when reading. The efferent stance is typically adopted when the reader is attempting to take away information from a text for future use (i.e., test or quiz) (Rosenblatt, 1969; 2005). A reader adopts an aesthetic stance when empathizing with or living within the experience of a character in a typically fictional text. For the purposes of this study we have defined the knowledge gained through an efferent stance as academic cognitive knowledge and the knowledge gained through an aesthetic stance as empathetic knowledge. This framework supports the use of purposeful and intentional teaching practices combined with carefully chosen fiction texts that can lead students beyond either academic cognitive knowledge acquired through an efferent stance or empathetic knowledge acquired through an aesthetic stance to a nexus where both reading stances coincide.

Portal (1987, as cited in Louie, 2005) asserted that "students must not simply hold beliefs and values in mind

as inert knowledge but work with them in order to understand and to explain what other people do" (p. 568). Undergraduate students were provided opportunities to refine and define their thinking about ASD through readings of a contemporary YA book, academic textbook, and class discussions. Rosenblatt (2005) anticipated that classrooms would be the central location in which the negotiation process would occur and that these negotiated processes would need to be guided by a knowledgeable other. This investigation embodied the tenets of transactional literacy in that after reading the text and interacting with the characters, the student interacts with others through facilitated small and whole group discussions beginning a critical evaluation of the perspectives of the other readers. This allows for their personal readings to be challenged and changed (Connell, 2008). Therefore, learning was grounded in a social context – the context of classroom, community, and conversation.

Disabilities and Young Adult Realistic Fiction

Undergraduate special education courses commonly use textbooks to deliver course information. While textbooks provide factual information about the history, process, and delivery of special education as well as the types, causes, and characteristics of specific disabilities, they have been criticized for their one-dimensional perspective (Hughes et al., 2014; Jones, 2001). Supplementing textbooks with fiction allows the student to connect the dense information taught from the textbook with real life in a less technical and more enjoyable way. Students must understand disabilities in ways that go beyond the textbook definition and more toward the understanding and acceptance of the student with exceptionalities . Educators must embody the acceptance of the student with exceptionalities (Ford et al., 2001).

Many researchers (Andrews, 1998; Fein & Ginsberg, 1978; Marlowe & Maycock, 2001; Dyches & Prater, 2000; Prater et al., 2006) have noted that the use of literature by or about individuals with exceptionalities can be useful in promoting awareness, understanding, and acceptance of persons with exceptionalities and can assist in creating positive attitudes towards them. Marlowe and Maycock (2001) found that literary texts were effective at promoting a positive attitude toward those with disabilities when used in teacher education. Hughes et al. (2014) used fiction literature as a supplement to textbooks with preservice teachers to explore changes in students' content knowledge about individuals with ASD. They found that the students who read the fiction literature along with the textbook indicated increased knowledge and

a greater perspective of the complexities of ASD. For these reasons, the researchers limited our book choice to modern realistic fiction.

Modern realistic fiction is often cited as the most popular genre of YA realistic fiction by the American Library Association because its subject matter is closest to the reader's real lived experiences (Darigan et al., 2002). This genre encourages disbelief, meaningful vicarious interactions with the protagonist, and a window into character motivation through internal dialogue. Lewis and Johnson (1982) noted that contemporary realistic fiction provides another perspective from which to consider disabilities that one cannot get from textbooks, field trips, or even observations of people who are disabled. This genre offers a unique opportunity for future exceptional and disabled students to step out of the pages of the novel and introduce themselves to future teachers. Louie (2005) notes that "Stories tend to present characters as living and breathing individuals, not as faceless masses of people" (p. 566).

Contemporary YA realistic literary fiction also encourages decentering. Decentering builds on the assumption that people have different life experiences that impact the lens through which they see the world. To step away from a self-centered approach of interpretation requires a person to look through a different lens to consider a new way to interpret new information (Barlund & Nomura, 1985). Decentering demands an empathetic response to a fictional character. Davis (1994) noted that empathy suggests an active effort to understand another by seeing the world through their eyes. For the purposes of this study, the researchers defined *academic cognitive knowledge* as an accurate and factual understanding of ASD and *empathetic knowledge* as the ability to understand the perspectives of a person with ASD or feel what a person with ASD feels (Goleman et al., 2017).

METHODS

Setting and Participants

The study was conducted at a liberal arts college in the southeastern United States. The college offers a degree in Collaborative Education which prepares graduates to be dually-certified in Special Education and Elementary Education K-6.

All participants in this project were students recruited from a course designed to survey the role and scope of educational programs for exceptional children, including etiology, identification, and incidence. Researchers collected data from 135 participants who were enrolled in this course

Table 1. **Demographics of Research Participants (N= 135)**

Demographic Information	Categories	Percent of Population
Gender	Female	78.5%
	Male	21.5%
Class/Age of College Student	First Years (19 years)	8.1%
	Second Years (20 years)	57%
	Third Years (21 years)	25.2%
	Fourth Years (22 years)	9.6%
Ethnicity	Caucasian	82.2%
	Black	12.6%
	Hispanic	3%
	Other	2.2%
Experience with Individuals with Autism	Experience	43%
	No Experience	57%

between Fall 2016 and Spring 2020. Data was collected from five terms in the four academic years. The participants represented a range of traditional United States college students, ages 19-22 years of age. The majority of participants (57%) were in their second year of college (20 years). The majority of participants were Caucasian (82.2%) and/or identified as female (78.5%). The number of participants who reported experience with individuals with ASD was similar to the number of participants who reported no experience with individuals with ASD (see Table 1).

Selection of Young Adult Text
The researchers chose the text *Rain, Reign* (Martin, 2014) for this study. The main character of this text is Rose who has a diagnosis of high-functioning autism, and the story is told from her point of view. The story explores the difficulties Rose has learning in a general education classroom and the complexities of her relationship with her father who exhibits little understanding or acceptance of Rose's differences. Students get to know the main character through her lived experiences as a person with ASD without ever encountering explicit definitions or descriptions of the characteristics of individuals with ASD.

The text included in this study was limited to YA realistic fiction for several reasons. Literary fiction, particularly contemporary realistic fiction, is character driven. This specific type of contemporary literary fiction complemented the academic content taught alongside the fiction reading. Contemporary YA realistic literary fiction includes settings and plot elements that are accessible, accurate, and believable as the character moves among them. Contemporary realistic literary fiction also includes protagonists who could be contemporaries of the study's readers, encouraging understanding and empathy. The characters are multi-dimensional and inhabit social situations that are unique and which, therefore, require readers to attend to and interpret subtle characteristics and cues (Kidd & Castano, 2019). Many undergraduate students become fascinated with specific exceptionalities and their characteristics at the expense of understanding the person who exhibits those exceptionalities. The researchers chose to exclude first-person accounts and memoirs and rely solely on YA realistic literary fiction for its ability to foster vicarious identification with and through the protagonist.

Procedures
Researchers investigated the purposeful combination of independent reading of *Rain, Reign*, assigned textbook readings, classroom discussions, and class lectures and instruction on undergraduate students' academic cognitive knowledge and empathetic knowledge of persons with exceptionalities. Students completed one questionnaire at three different points during the 14-week term. This questionnaire served as the pre-, mid-, and post-assessment. The research met IRB approval and participant protections were followed.

To collect data regarding their knowledge of ASD, students completed the pre-assessment questionnaire during the first class.,. After completion of the pre-assessment, students were assigned to read *Rain, Reign* before the third week of class. After completing the assigned reading but prior to any formal classroom instruction related specifically to ASD, students completed the mid-assessment

questionnaire. The student satisfaction survey was also completed at the time of mid-assessment. Students were asked to rate their agreement or disagreement with specific statements concerning their attitudes and perceived growth related to the reading. Subsequently, academic textbook readings and *Rain, Reign* were discussed during class meeting times in both small literature circle groups and large groups. Class lectures and instruction specific to the topic of ASD were provided. Participants completed the post-assessment during the seventh week of class.

Instruments
Questionnaire
The researchers developed a questionnaire to determine the participants' academic cognitive knowledge and empathetic knowledge of individuals with ASD. The questionnaire included the following four open-ended questions which address both academic cognitive knowledge and empathetic knowledge:

1) How would you define autism?
2) How many people have autism, and what are the probable causes?
3) What are the symptoms of autism and their implications?
4) How do you feel about autism?

Questionnaire Rubric
The open-ended questions were scored on a rubric created by the researchers based on work by Hughes and

Hunt-Baron (2010). Two additional domains (Domain 2 and Domain 3) were added to provide more specific information about academic cognitive knowledge of ASD (Table 2). The rubric (Appendix A) was used to evaluate changes in students' understanding and empathy relative to individuals with ASD in seven domains. Both original domains by Hughes and Hunt-Baron (2010) and the added domains are listed in Table 2.

Student Satisfaction Survey
At the mid-assessment, participants were given the student satisfaction survey based on the work by Hughes and Hunt-Baron (2010) and Hughes et al. (2014). Students rated the following statements using a 5-point Likert scale (1-strongly disagree, 2-disagree, 3-neutral, 4-agree, and 5-strongly agree):

1) I enjoyed this book.
2) By reading this book, I learned more about individuals with disabilities.
3) By reading this book, I am more empathetic to the needs of individuals with disabilities.
4) The reading assignment contributed to my learning.
5) I would recommend this book to a friend or colleague.
6) Reading this book contributed to my understanding of individuals with disabilities.

Data Collection and Analysis
Responses to the questionnaire were scored using the questionnaire rubric (Appendix A). The questionnaire

Table 2. **Domains Related to Evaluating Student Academic Cognitive Knowledge and Empathic Knowledge**

Domain 1	**Student Assumptions and Understanding of ASD** This domain focuses on the information the student knew about ASD. (Based on the first theme of the Hughes and Hunt-Baron (2010) work)
Domain 2	**Student Knowledge of Possible Causes and Prevalence of ASD** This domain focuses on the understanding of the causes and prevalence of ASD.
Domain 3	**Student Knowledge of Characteristics of ASD and the Implications** This domain focuses on the understanding of the characteristics of ASD and the implication.
Domain 4	**Student Interest in ASD and Recognition of One's Gaps in Knowledge** This domain focuses on students' growing interest in ASD and an understanding of their own gaps in knowledge. (Based on the second theme of Hughes and Hunt-Baron (2010) work).
Domain 5	**Student Knowledge Based on Reliable Sources of Information** This domain focuses on students' growing knowledge base of ASD based more on knowledge from literature than experience. (Based on the third theme of Hughes and Hunt-Baron (2010) work)
Domain 6	**Student Recognition of the Possible Strengths of Those with ASD** This domain focuses on the students' growing understanding that those with ASD can have the characteristics of ASD and also have exceptional strengths. (Based on the fourth theme of Hughes and Hunt-Baron (2010) work)
Domain 7	**Student Empathy Toward Those with ASD** This domain focuses on the students' growing compassion for those with ASD and an understanding of the complexity of ASD. (Based on the fifth theme of Hughes and Hunt-Baron (2010) work).

rubric used a 0-2 rating scale with 0 being least knowledgeable/empathetic and 2 being most knowledgeable/empathetic. If a student did not complete all three questionnaires (pre-, mid-, and post-assessment) their responses were not used for this research.

Content validity and inter-rater reliability were established on the questionnaire rubric. Content validity was established by having education experts review and provide feedback. Inter-rater reliability of rubric scoring was established through independent grading and comparison of rubric scores across 15% of randomly selected questionnaire rubrics. Two raters attained 95% inter-rater reliability using Intraclass Correlation Coefficient (ICC).

The Wilcoxon signed ranks test was used to analyze the data. This nonparametric measure is appropriate given that the data did not represent a normal distribution. A 95% Confidence Interval of the Difference was chosen (see Tables 1, 3, and 4). Descriptive statistics were used to analyze student satisfaction survey data.

FINDINGS

Data analysis showed that participants improved in their academic cognitive knowledge and empathetic knowledge of ASD. The quantitative analysis of the open-ended questionnaire indicated that students improved their knowledge and understanding of ASD when the typical college instructional strategies (whole group discussions, literature circles, academic articles, and textbook readings) were used and preceded by the reading of a YA realistic fiction text with a main character who had ASD.

Furthermore, the analysis of the student satisfaction survey corroborated these findings.

Quantitative Findings
Comparison of Pre-Assessment and Post-Assessment Data
As shown in Table 3, significant differences were seen in all seven domains and the rubric average scores between pre- and post-assessment. Data indicates significant growth in academic cognitive learning and empathetic knowledge between the pre-assessments and post-assessments. The highest Z-values were in Domain 2: Student Knowledge of Causes (Z= -9.285), Domain 3: Student Knowledge of Characteristics (Z=-9.380), and Domain 7: Student Empathy (Z=-8.367). This information suggests that students grew in all domains following ALL instructional strategies (YA fiction, and other traditional coursework). All instructional strategies implemented contributed to the students' overall learning.

In order to understand the influence of YA literature on the acquisition of academic content knowledge and empathetic knowledge, researchers also compared data collected from pre-assessment to mid-assessment data, and from mid-assessment to post-assessment data,

Comparison of Pre-Assessment and Mid-Assessment Data
Comparison of pre-assessment data and mid-assessment data indicated significant differences in six domains (see Table 4). The highest Z-values were in Domain 3: Student Knowledge of Characteristics (Z=-7.835), and Domain 7: Empathy (Z=-6.986). This suggests that the reading of *Rain, Reign* allowed students to grow in their

Table 3. **Pre-Assessment to Post-Assessment Means, Z Value, and Significance by Rubric Domains** [a]

Rubric Domains	Pre-Assessment Means	Post-Assessment Means	Z value	Significance (95% Confidence)
Domain 1: Student Assumptions	.65	1.52	-8.451	.000
Domain 2: Student Knowledge of Possible Causes	.46	1.62	-9.285	.000
Domain 3: Student Knowledge of Characteristics	.65	1.70	-9.380	.000
Domain 4: Student Interest and Knowledge Gap	.18	.46	-4.069	.000
Domain 5: Student Knowledge Based on Reliable Sources of Information	.25	.56	-4.617	.000
Domain 6: Student Recognition of Possible Strengths of Those with ASD	.28	.82	-6.091	.000
Domain 7: Student Empathy	.642	1.39	-8.367	.000

a. Wilcoxon Signed Rank Test (2-tailed)

Table 4. **Pre-Assessment to Mid-Assessment Means, Z Value, Significance by Rubric Domains[a]**

Rubric Domains	Pre-Assessment Means	Mid-Assessment Means	Z value	Significance (95% Confidence)
Domain 1: Student Assumptions	.65	1.045	-5.181	.000
Domain 2: Student Knowledge of Causes	.48	.82	-4.498	.000
Domain 3: Student Knowledge Characteristics	.65	1.3	-7.835	.000
Domain 4: Student Interest and Knowledge Gap	.18	.40	-3.760	.000
Domain 5: Student Knowledge Based on Reliable Sources of Information	.30	.53	-3.549	.000
Domain 6: Student Recognition of Possible Strengths of Those with ASD	.30	.48	-2.816	.005
Domain 7: Student Empathy	.64	1.22	-6.986	.000

a. Wilcoxon Signed Rank Test (2-tailed)

academic cognitive knowledge of ASD characteristics and their empathetic knowledge of those with ASD.

Student Satisfaction Survey
The student satisfaction survey was only completed at mid-assessment using a Likert scale with 1 as Strongly Disagree and 5 as Strongly Agree. Descriptive Data was analyzed. Eighty-seven percent of answers to all satisfaction questions were in the positive (Table 4). Positive was defined as a score of 4 (Agree) or 5 (Strongly Agree). Students agreed they enjoyed the book (mean=4.39), and they would recommend it to a friend (mean=4.30). Students believed that the assignment contributed to their learning of ASD (mean=4.21) and that by reading the book, they learned more about individuals with ASD (mean=3.89). Students also agreed that the book contributed to their empathy (mean=3.81) and their understanding of individuals with ASD (mean=4.33). These

data are consistent with findings from the quantitative analysis of the change in pre-assessment to mid-assessment means (Table 4).

Comparison of Mid-Assessment and Post-Assessment Data
Significant differences between mid- and post-assessment were found in four domains (Table 6). The highest Z values were in Domain 1: Student Assumptions (Z= -7.169), Domain 2: Student Knowledge of Causes (Z= -8.143), and Domain 3: Student Knowledge of Characteristics (Z=-6.435). This suggests that student assumptions of those with ASD were challenged. Furthermore, students grew in their knowledge of the causes and characteristics of those with ASD. It is also important to point out that Domain 6: Student Recognition of the Possible Strengths of Those with ASD (Z= -4.347) was found to be significantly different between mid- and post-assessments. This indicates that students also grew in their ability to see

Table 5. **Student Satisfaction Survey Question Means and Percent of Positive Responses**

	Mean	% Scores of 5	% Scores of 4
I enjoyed this book.	4.39	48.9%	43%
By reading this book, I learned more about individuals with disabilities.	3.89	10.4%	74.1%
By reading this book, I am more empathetic to the needs of individuals with disabilities.	3.81	25.2%	51.9%
The class assignment contributed to my learning.	4.21	29.6%	63%
I would recommend this book to a friend or colleague.	4.30	47.4%	35.6%
Reading this book contributed to my understanding of individuals with disabilities.	4.33	38.5%	55.6%

Table 6. **Mid-Assessment to Post-Assessment Means, Z Value, and Significance by Rubric Domains**[a]

Rubric Domains	Mid-Assessment Means	Post-Assessment Means	Z value	Significance (95% Confidence)
Domain 1: Student Assumptions	1.045	1.52	-7.169	.000
Domain 2: Student Knowledge of Causes	.82	1.62	-8.143	.000
Domain 3: Student Knowledge of Characteristics	1.3	1.70	-6.435	.000
Domain 4: Student Interest and Knowledge Gap	.409	.486	-0.887	.375
Domain 5: Student Knowledge Based on Reliable Sources of Information	.535	.56	-0.289	.772
Domain 6: Student Recognition of Possible Strengths of Those with ASD	.48	.82	-4.347	.000
Domain 7: Student Empathy	1.22	1.39	-2.562	.0103

a. Wilcoxon Signed Rank Tests (2-tailed)

strengths in those with ASD. There was no significant difference in Domain 4: Student Interest and Knowledge Gap (Z=-0.887). This data indicates that students did not acknowledge a growing interest in ASD or gains or gaps in knowledge regarding ASD. There was also no significant difference in Domain 5: Student Knowledge Based on Reliable Sources of Information (Z= -0.289). This indicates that students did not refer to a reliable source in post-assessment. There was also no significant difference in Domain 7: Student Empathy (Z= -2.562).

DISCUSSION

Creating inclusive educational environments for all learners is a challenge faced across the globe and is a concern for all educators at all levels (Cook, 2002; Shade & Steward, 2001) Researchers questioned if the inclusion of YA fiction literature within an introductory level special education course would increase preservice teachers' academic cognitive knowledge and/or empathetic knowledge about individuals with ASD. Data indicate that mean scores across
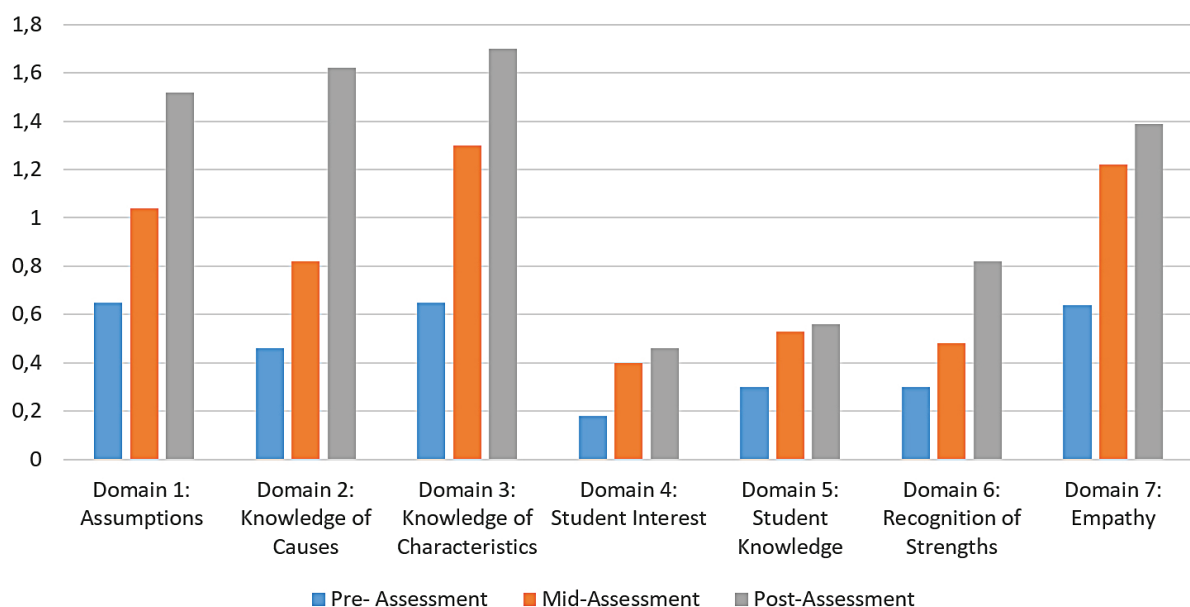

Figure 1. Domain Growth of Means from Pre-Assessment, Mid-Assessment to Post-Assessment

all domains increased from pre-assessment to mid-assessment and mid-assessment to post-assessment (Figure 1).

Academic Cognitive Knowledge

Academic cognitive knowledge was significantly improved between the pre- to mid-assessment in Domains 1, 2, and 3. These findings were supported by the results of the student survey in which 84.5% of the students agreed or strongly agreed that the fiction text increased their academic cognitive knowledge about individuals with disabilities. These findings are consistent with research findings (Meyers et al., 2019) suggesting that the strategic and purposeful use of realistic fiction in preservice education courses can improve students' academic cognitive knowledge about people with exceptionalities. Additionally, statistically significant gains in academic cognitive knowledge were found in Domains 1, 2, and 3 between the mid- and post-assessment. In Domain 1: Student Assumptions, the increase of means from 1.05 (mid-assessment) to 1.52 (post-assessment) is statically significant ($Z=-7.169$). Comparable increases were noted in Domain 2: Student Knowledge of Possible Causes and Domain 3: Student Knowledge of Characteristics.

One possible explanation for this finding is that college students are proficient readers and able to make inferences from their reading. While the fiction book does not explicitly define ASD, students were able to construct a working definition of ASD and understand the characteristics of individuals with ASD prior to interactions with the course textbooks, academic articles, and lectures. Constructing a definition and considering the characteristics of those with ASD provided the students with a broader schema with which to refine their knowledge of ASD.

Empathetic Knowledge

Empathetic knowledge was significantly improved from pre-assessment to mid-assessment as would be anticipated based on Rosenblatt's theory relative to the aesthetic stance of reading. Researchers found a statistically significant increase in Domain 7, Student Empathy ($Z=-6.986$). Means from pre- to mid-assessment increased from .64 to 1.22 (Z score of -6.986 with significance of .000). Responses from the student satisfaction survey support the growth from pre- to mid-assessment in this area. Seventy-seven percent of all students agreed (25.2%) or strongly agreed (51.9%) that the fiction text increased their empathetic knowledge of individuals with ASD. This finding aligns with those of Prater and coauthors (2006) that the use of realistic fiction in conjunction with more traditional methods of instruction provides opportunities for increased empathetic knowledge of people with ASD.

Empathetic knowledge continued to improve between mid-assessment and post-assessment. One possible explanation for this unanticipated continued growth in empathic understanding could be centered on the relationship students developed with Rose, the main character with ASD. Students continued to refer to Rose, the fictional character, during class discussions regarding academic instruction or academic readings. This could indicate that the empathetic relationship formed with the fictional character was centered on new academic learning. This continued growth in empathy is an area for future research.

Limitations

One limitation of the study may be response bias. Because the study is situated in the context of a college course, participants may have provided responses they believed were expected by the professor. To counter this perception, students were reminded at each administration that questionnaire responses were not a part of the course requirements. Another limitation of this study may be the range restriction of the data. The rubric (Appendix A) developed to analyze the participant open-ended responses used a 3-point scale (0-2). The rubric options may have limited the ability to differentiate between different levels of performance, specifically missing exceptional performances. A 5-point rubric could have captured more subtle differences in the students responses. Another limitation of this study may be the choice of text. Researchers used a YA realistic fiction book with a protagonist with a diagnosis of ASD. These results may not be generalizable to growth of academic cognitive and empathetic knowledge by undergraduate students to children with other exceptionalities. One implication for future study may be the use of YA texts whose protagonist has a different exceptionality to see if the gains in knowledge and empathy are similar. Another implication for future study may be empathy as a construct. The concept of empathy is difficult to measure. This study explored empathy in a general manner. Future research employing more specific questions regarding the expression of empathy and its impact on teaching dispositions is needed.

CONCLUSION

This study describes one way to combine the use of YA realistic fiction literature with more traditional instruc-

tional approaches to increase both academic cognitive knowledge and empathetic knowledge towards individuals with ASD. It contributes to a growing body of literature (Andrews, 1998; Fein & Ginsberg, 1978; Marlowe & Maycock, 2001; Dyches & Prater, 2000, Prater et al., 2006) which has reported that realistic fiction can be useful in increasing both preservice teachers' knowledge about, and empathetic knowledge of, people with ASD. There is a plethora of YA realistic fiction that is available for use in college classrooms which allows future students to step out of the pages of a book and intro-

duce themselves long before young teachers begin their careers. Teaching at the intersection of knowledge and understanding demands purposeful instruction that connects future teachers to their future students.

REFERENCES

Andrews, S. E. (1998). Using inclusion literature to promote positive attitudes toward disabilities. *Journal of Adolescent & Adult Literacy, 41*(6), 420-426.

Barlund, D. E. & Nomura, N. (1985). Decentering, convergence, and cross-cultural understanding. In L. Samovar & R. Porter (Eds.), *Intercultural communication: A reader,* (pp. 347–366). Belmont, CA: Wadsworth.

Connell, J. M. (2008). The emergence of pragmatic philosophy's influence on literary theory: Making meaning with texts from a transactional perspective. *Educational Theory*, *58*, 1, 102 – 122. https://doi.org/10.1111/j.1741-5446.2007.00278.x

Cook, B. G. (2002). Inclusive Attitudes, Strengths, and Weaknesses of Pre-service General Educators Enrolled in a Curriculum Infusion Teacher Preparation Program. *Teacher Education and Special Education*, *25*(3), 262–277. https://doi.org/10.1177/088840640202500306

Darigan, D. L., Tunnell, M. O., & Jacobs, J. S. (2002). *Children's literature: Engaging teachers and children in good books*. London-New York: Merrell.

CDCP, (2021). *Data and statistics on autism spectrum disorder*. Centers for Disease Control and Prevention. Retrieved from https://www.cdc.gov/ncbddd/autism/data.html (access: September 9, 2021).

Davis, M. H. (1994). *Empathy: A social psychological approach*. Brown and Benchmark.

De Beco, G. (2017). The right to inclusive education: Why is there so much opposition to its implementation? *International Journal of Law in Context*, *85*(6), 1329-1356. https://doi.org/10.1111/1468-2230.12742

Dyches, T. T., & Prater, M. A. (2000). *Developmental disability in children's literature: Issues and annotated bibliography.* Reston, VA: Council for Exceptional Children, Division on Mental Retardation and Developmental Disabilities.

Fein, R. L. & Ginsberg, A. H. (1978) Realistic literature about the handicapped. *The Reading Teacher*, *37*(1), 802-805.

Ford, A., Pucach, M., & Otis-Wilbourn, A. (2001). Preparing general educators to work well with students who have disabilities: What's reasonable at the preservice level? *Learning Disability Quarterly 4*(24), 275–285.

Goleman, D., McKee, A., & Wayz, A. (2017). *Empathy (HBR emotional intelligence series)*. Cambridge, MA: Harvard Business Press.

Hughes, E. M., & Hunt-Barron, S. (2010). *Meaningful Connections for pre-service teachers: autism spectrum disorder and fictional literature.* (Poster presentation) Council for Exceptional Children Conference, Nashville, TN.

Hughes, E. M., Hunt-Barron, S., Wagner, J. Y., & Evering, L. C. (2014). Using Young Adult Literature to Develop Content Knowledge of Autism for Preservice Teachers. *The Teacher Educator*, *49*(3), 208-224. https://doi.org/10.1080/08878730.2014.917754

WB, (2021*). Inclusive education initiative: Transforming education for children with disabilities.* The World Bank. Retrieved from https://www.worldbank.org/en/topic/socialsustainability/brief/inclusive-education-initiative-transforming-education-for-children-with-disabilities (accessed September 14, 2021).

Jones, R. (2001). U.S. textbooks are long on glitz, but where's the beef? *Education Digest, 66*(6), 23-30.

Kanter, A. (2019). The right to Inclusive education for students with disabilities under international human rights law. In G. de Beco, S. Quinlivan, and J. E. Lord, *The Right to Inclusive Education in International Human Rights Law*, (pp. 15–57). https://doi.org/10.1017/9781316392881.003

Kidd, D., & Castano, E. (2019) Reading literary fiction and theory of mind: Three preregistered replications and extensions of Kidd and Castano (2013). *Social Psychological and Personality Science, 10*(4), 522-531.

Lewis, R. B., & Johnson, M. K. (1982). Effects of exceptional child literature on prospective special educators. *Teacher Education and Special Education: The Journal of the Teacher Education Division of the Council for Exceptional Children*, *5*(3), 15–18. https://doi.org/10.1177/088840648200500303

Louie, B. (2005). Development of empathetic responses with multicultural literature. *Journal of Adolescent & Young Adult Literacy*, *48*(7), 566 – 578.

Marlowe, M., & Maycock, G. (2001). Using literary texts in teacher education to promote positive attitudes toward children with disabilities. *Teacher Education and Special Education*, *24*(2), 75-83.

Martin, A. M. (2014). *Rain Reign*. Feiwel and Friends.

Meyers, S., Rowell, Kl, Wells, M., & Smith B.C. (2019) Teacher empathy; A model of empathy for teaching student success. *College Teaching, 67*(3), 160-168.

Prater, M. A., Dyches, T. T., & Johnstun, M. (2006). Teaching students about learning disabilities through children's literature. *Intervention in School and Clinic*, *42*(1), 14–24.

Robertson, K., Chamberlain, B., & Kasari, C. (2003). General education teachers' relationships with included students with autism. *Journal of Autism and Developmental Disorders*, *33*(2), 123-130.

Rosenblatt, L. M. (1969). Towards a transactional theory of reading. *Journal of Reading Behavior*, *1*(1), 31–49. https://doi.org/10.1080/10862969609546838

Rosenblatt, L. (2005). *Making meaning with texts: Selected essays*. Heinemann.

Shade, R. A., & Stewart, R. (2001). General education and special education preservice Teachers' attitudes toward inclusion. *Preventing School Failure: Alternative Education for Children and Youth*, *46*(1), 37–41. https://doi.org/10.1080/10459880109603342

Teachers, (2021). *United Nations Educational, Scientific and Cultural Organization.* Retrieved from https://en.unesco.org/themes/teachers (accessed September 13, 2021).

United Nations, (2016) Article 24: Right to inclusive education. Retrieved from https://www.ohchr.org/Documents/HRBodies/CRPD/GC/RighttoEducation/CRPD-C-GC-4.doc (accessed October 13, 2022).

Wei, X., Wagner, M., Christiano, E. R., Shattuck, P., & Yu, J. W. (2014). Special education services received by students with autism spectrum disorders from preschool through high school. *The Journal of Special Education*, *48*(3), 167–179. https://doi.org/10.1177/0022466913483576

Zeidan, J., Fombonne, E., Scorah, J., Ibrahim, A., Durkin, M. S., Saxena, S., Yusuf, A., Shih, A., & Elsabbagh, M. (2022). Global prevalence of autism. *A systematic review update. Autism research*, *15*(5), 778-790.

Appendix A

Academic Cognitive and Empathetic Knowledge Rubric
(based on Hughes & Hunt-Baron (2010)

Domain 1 Student Assumptions and Understanding of ASD

0 scoring – clearly incorrect generalization/information. (For example, "ASD is a learning disability, possible treatment includes a gluten free diet, or "ASD is caused by vaccinations")

1 scoring – Limited understanding of ASD information. (For example, "ASD is a developmental disorder," student lists some correct symptoms, or student provides an example of best practices like ABA)

2 scoring – Definition of ASD as part of a spectrum of disorders, wide variation between cases in symptoms - difficult social interactions, language delays, unusual repetitive behaviors, possible intellectual disabilities.

Domain 2 Student Knowledge of Possible Causes and Prevalence of ASD

0 scoring – clearly incorrect generalization/information. (For example, "treatment for ASD includes a gluten free diet", or "ASD is caused by vaccinations", or "ASD is a rare disease")

1 scoring – limited information about the causes of ASD. (For example, "prevalence is increasing" and listing a possible cause

2 scoring – understanding of the mechanism as a multi-factorial system including genetic, environmental, and developmental causes. Prevalence between 1:50 and 1:100, or 1%-4% individuals worldwide, or 3- 4 million in U.S.

Domain 3 Student Knowledge of Characteristics of ASD and the Implications

0 scoring – provides clearly incorrect generalization/information. (For example, "all persons with ASD have mental retardation, autistic students cannot talk or write")

1 scoring – lists one or two symptoms like difficult social interactions, language delays, unusual repetitive behaviors, intellectual disabilities

2 scoring – provides a complete description of cognitive, academic, social, behavioral, and emotional characteristics

Domain 4 Student Interest in ASD and Recognition of One's Gaps in Knowledge

0 scoring – statement of lack of knowledge and no statement of particular interest

1 scoring – statement of gained knowledge and some interest

2 scoring – direct statement of gained knowledge, gaps in knowledge, and interested in future study with a plan

Domain 5 Student Knowledge Based on Reliable Source of Information

0 scoring – secondary personal anecdotes (For example, "my 5th grade friend's brother had ASD and …" or no description of information source)

1 scoring – personal anecdotes (For example, "I had a class with an autistic student and" … or" I worked with student who has ASD…" or reliance on public news and media)

2 scoring – Authoritative source such as textbook, fiction work, or lecture for information

Domain 6 Student Recognition of the Possible Strengths of Those with ASD

0 scoring – Only description of disability and or negative view of outcomes

1 scoring – Recognition of both disability and possible positive outcomes

2 scoring – Recognition of disability, possible positive outcomes, and exceptionalities as a strength – i.e., "unique viewpoint can help when Temple Grandin designed … "

Domain 7 Student Empathy for Those with ASD

0 scoring – Lack of empathy. Shows no understanding of the feelings of others. (For example, "autistic students cannot participate in normal classes" etc.)

1 scoring – Limited empathy. Shows some understanding of the feelings of others. For example, "autistic students need some help")

2 scoring – Empathy and understanding of the feelings of others. (For example, "In my opinion, it's more like a different way of thinking and reacting compared to most students.")