

FAMILY FACTORS: MATHEMATICS COMPREHENSION AND DIVORCE

Sonja L. Howell

2020

### **Abstract**

This annotated biography describes the need for schools to get more involved in children's lives to help them during their parent's separation early on to keep their mathematics comprehension from failing. It gives examples of what other schools have done and answers "*How does different styles of divorce and separation impact pre- and young adolescent children's mathematical comprehension and educational outcomes?*"

The paper shares what other schools have done and how well the family functions is more important than the actual structure in order for educators to know how to work with each child individually before they begin to fail. Early intervention is key, if you know what is going on in their personal lives prior to the drop in comprehension.

## **Introduction**

This research explains how separation and divorce effects educational outcomes in the subject of math comprehension for pre- and early-adolescent children whose families do not function well. It includes practices, policies, procedures or lack of early interventions in the schools that have led to the problem.

It is important for educators to understand family factors of divorce when teaching and learning in order to assist in learning and comprehension of mathematics. The steps that have already been taken to address these family factors so students may have a sound location for learning and what further studies and actions may be needed in the future.

## **Research Question**

*“How does different styles of divorce and separation impact pre- and young adolescent educational outcomes?”*

## **Literature Review**

The literature compiled describes studies completed on some of the effects of divorce on pre- and young adolescent children, normal and altered mathematical comprehension outcomes using related research. The research will show how well the family functions has a large effect on mathematics comprehension and that early intervention by the school may help these students.

## **Effects of Divorce on Middle School Aged Children**

### ***Reference 1:***

GARVIN, J. (1984). *Children of divorce - A challenge for middle school teachers*. Middle School Journal, 16(1), 6-7.

Garvin (1984) reports results from over 8,000 middle school students sharing “symptoms in school” and “academic symptoms” that teachers are challenged with children of divorce with “practical suggestions” leading to his conclusion of adding the safety of a healthy climate and coping tools for children to reinforce the child’s strength in their own self concepts.

The study shows signs of absent mindedness, nervousness, temper, moodiness physical ailments, lack of confidence, discipline problems, while other students show signs of greater understanding of resilience. The instructors have the task of deciphering the different types of side effects each child will display on any given day.

Some studies showed the academics improved for some students after the divorce.

Children may display resentment if the subject of divorce was brought up too soon. Some children of divorced homes understood feelings more than those from families who have not separated. It mentioned that children in middle school are also going through puberty and developmental changes and a divorce could be “catastrophic” at this time.

***Reference 2:***

Sprinthall, N., Hall, J., & Gerler, E. (1992). *Peer counseling for middle school students experiencing family divorce: A deliberate psychological education model*. *Elementary School Guidance & Counseling*, 26(4), 279-294.

Sprinthall, Hall, Gerler and Jr (1992) tested peer counseling models using high school students with empathy and the ability to relate to others as role models for middle schoolers who had signs of disruption in families and divorce to replace the normal school counselor assistance most students receive, if the counselors have time. They believed they could find a better outcome using peers.

They found symptoms of the middle schoolers who had disruptions in their families included the following: pathological symptoms, psychologically upset, self-protective ego levels. Need for development growth, lack of empathy, anti-social human behavior, aggression, lack of responsibility, lack of understanding, lack of maturity, lack of appreciation, lack of ability to relate to others, lack of thinking in a complex level. In their test, they chose to focus on middle schoolers in divorced or separated families for self-esteem, achievement and isolation.

Having these high school peers helped the middle schoolers mainly with personal efficacy and control. Many other goals were met as well, such as problem solving, interpersonal awareness and mature judgment.

***Reference 3:***

Keller, B. (1997). Divorce increasingly puts schools in the middle of family conflicts. *Education Week*, 16(28), 1.

Keller and Bess (1997) documented accommodations made for parents and children of divorce to calm things down for schools. This documentation included that children do better in school if both parents stay involved. The report leads you to believe less disputes will happen at the school when the school is well informed of the facts.

Accommodations were made for both parents regardless of custody or non-custodial schedules. These alterations included separate times for conferences, adding both parents to the registration and mailing documents to both parents. Some studies went even deeper to add the parenting agreements or orders to the children's files, advocating for both parents with portfolios and displays of student work.

All of these accommodations assisted to halt parents being estranged, eliminate difficult situations of the unknown, lack of policies, differences of willingness of schools wanting

to assist, lack of notifications, lack of fairness, kidnappings, well-intentioned missteps and battling parents who will not stop until they get what they want.

***Reference 4:***

Wood, J. J., Repetti, R. L., & Roesch, S. C. (2004).

*Divorce and children's adjustment problems at home and school: The role of depressive/withdrawn parenting.* Child Psychiatry and Human Development, 35(2), 121-42. doi:<http://dx.doi.org.ezproxy.liberty.edu/10.1007/s10578-004-1881-6>

Wood, Repetti, & Roesch, (2004) discovered that intervention programs for students whose parents separated would be best implemented during preadolescence and early adolescence.

Some of the adjustment problems at home and at school relate to depression or withdrawn parents, especially mothers during preadolescence or possibly increased parental over protection or overinvolvement of parents who are lonely or have insufficient social support systems in place.

Adolescent children were documented to have greater externalized and internalized problems when the conflict levels between the parents were higher. For some children, these problems may have occurred prior to dissolution of the marriages. Externalized problems seemed to be trying to gain attention from preoccupied or withdrawn parents, teachers or other adult caregivers. Exact internalized problems for children were not labeled.

These problems balanced out as the children matured and began to find activities at school, in after school programs or with negative or positive peers as they normally would do at this age regardless of family structure.

**Reference 5:**

Brand, J. Moore, R., Song, X. & Xie, Y. (2019) *Parental divorce is not uniformly disruptive to children's educational attainment*. PNAS : Proceedings of the National Academy of Sciences of the United States of America. 116.15 (2019): 7266–7271. Web.

Brand, Moore, Song, X. and Xie, (2019) reports that divorce does not hurt every child's education. It states that other studies who prove that divorce is disruptive to studies oversimplify the results. The results did show educational completion rates were lower for children of divorce by a small percentage.

The studies showed more that children who suffered from divorce where the children who had not been accustomed to setbacks such as divorce. The report mentions many statistics pertaining to the likelihood of divorce. The educational achievement matched directly with the potential divorce as much as it did for those children's educational achievement and completion. The statistics for potential correlated with facts such as education of mother, what the mother's values and the comparison of religions between the parents.

This examination shows that the divorce was not the end all factor that determined educational success compared to the factors. Some of the factors were predetermined prior to the marriage. Factors listed were educated parents, working parents, chore distribution, and religion.

**Middle Schooler's Educational Outcomes****Reference 1:**

Hudley, C. & Eskeles., A., (2008) Gottfried. *Academic motivation and the culture of school in childhood and adolescence*. Oxford: *Oxford University Press*

Hudley and Eskeles (2008) reports that positive educational outcomes happen most when parents are involved in their adolescence's educational environments. The study states being involved in other aspects of their children's lives as well, but school has the largest effect. When parents and educators communicate well and have high expectations, the students achieve their motivational outcomes more than those children where the parents and the schools do not have a great relationship. Children have scored high when asked about their goals of doing what their family expects of them even during surveys of their individual goals. They went as far as saying the relationship between the parent and the teacher could predict the child's outcome in the course. As quoted, "Conversely, the complexity of findings across chapters indicates that such perceptions are also influenced by the larger culture and the various actors in the environments in which the student is a part, including peers, teachers, family, surrounding neighborhood, and even distal influences such as media stereotypes." This shows that it is not only the parent/teacher relationship, but the latter is the largest influence.

***Reference 2:***

Juvonen, J., Le, V.-N., Kaganoff, T., Augustine, C., & Constant, L. (2004). *Focus on the wonder years: Challenges facing the American middle school*. Santa Monica, CA: Rand.

Juvonen (2004) says that parent's participation in middle school and it's partially due to middle schoolers not sharing as much information as they did during elementary. Even though parental involvement in middle school is still very meaningful. It is written that the opportunity for parents and community organizations is needed as well as policies to keep parents involved. The conclusion states, "Taken as a whole, these studies found a positive and convincing relationship between family involvement and benefits for students, including academic achievement. This relationship holds across families of all

economic, racial/ethnic, and educational backgrounds and for students at all ages.” This explains why achievement declines in middle school, because parents’ involvement declines. The report shares that parents need more communication, to be used for their talents and knowledge, that they are allowed to help, that they are welcomed and sought out for help and seen as partners for decision making and advocacy.

In my children’s school we are actually told the opposite and led to believe we are only a distraction and to email the teachers if we need to communicate with the teachers or administration.

**Reference 3:**

Garbacz, S. A., Zerr, A. A., Dishion, T. J., Seeley, J. R., & Stormshak, E. (2018). Parent educational involvement in middle school: Longitudinal influences on student outcomes. *The Journal of Early Adolescence*, 38(5), 629–660.

<https://doi.org/10.1177/0272431616687670>

“Findings from Garbacz, Zerr, Dishion, Seeley, & Stormshak, (2018) revealed that overall parent educational involvement as well as school and activity involvement were statistically significant predictors of peer group affiliations while covarying monitoring knowledge.” More studies than this study would identify parent/school relationships regarding educational outcomes.

This report was solely on the parent’s involvement of the peers of their children. The peer involvement, more specifically who their peers are and how they relate to their own educational outcomes is important, as their peers and community is one of the factors relating to educational outcomes in a previous study.

Parents communicating and working with school staff regarding social interactions with peers and intervening where there is behavioral issues have resulted in benefits for student's outcomes. Using only family interventions has less of an effect.

Where parent monitoring of their children's peers, whereabouts and schoolwork showed higher, children participated in less deviant peers, with educational participation being the highest factor.

**Reference 4:**

Froiland, J. M., & Davison, M. L. (2014). Parental expectations and school relationships as contributors to adolescents' positive outcomes. *Social Psychology of Education: An International Journal*, 17(1), 1-17. doi:<http://dx.doi.org.ezproxy.liberty.edu/10.1007/s11218-013-9237-3>

Froiland and Davison (2014) found that parental expectations and positive parent school relationships were positively related to positive school outcomes. When the parent participates in school activities that relate to educational goals, communicating with the school and supporting the outcomes, higher achievements are accomplished by the students. However, when a parent goes too far and is too controlling as a child moves into the developmental stages of independence, this parent hurts the child's motivation factor. This is where the parents, educators and students have to come to terms with each other. Having a strong relationship with your child is more beneficial than parent management. The child knowing the parent's expectations are stronger than parent involvement or the parent's own achievements. Children who have two parents rank higher in scores than one parent, mainly due to time restraints.

The effort put in by parents during a child's younger years was more of a prediction of outcomes than middle or high school years.

**Reference 5:**

Rothon, C., Goodwin, L. & Stansfeld, S. (2012), Family social support, community “social capital” and adolescents’ mental health and educational outcomes: a longitudinal study in England. *Soc Psychiatry Psychiatric Epidemiol* 47: 697. <https://doi-org.ezproxy.liberty.edu/10.1007/s00127-011-0391-7>

Family social support and social capital are strong influencers of educational achievement. Rothon, Goodwin, and Stansfeld, (2012) This does not mean social status of parents. “our research suggests that there is a need to focus on the family as a provider of support to young people and to ensure that workplaces are able to provide flexible working patterns in order to allow parents to spend time with their children.” Knowing this, I have adjusted my work schedule to third shift while their dad works first shift allowing for flexibility to allow for support 24/7. Neither of us had employment that could let us be available when they needed us. Although we are separated, this should allow us to cover everything.

**Effects on Children’s Math Comprehension of Separated/Divorced Parenting Styles****Reference 1:**

Lin, Y., Washington-Nortey, P., Hill, O. W., & Serpell, Z. N. (2019). Family functioning and not family structure predicts adolescents’ reasoning and math skills. *Journal of Child and Family Studies*, 28(10), 2700-2707. doi:10.1007/s10826-019-01450-4

Family functioning is more important than family structure in predicting African American adolescents’ reasoning skills and math performance. Lin, Washington-Nortey, Hill, & Serpell, (2019) It’s hard for me to believe that this isn’t standard across all cultures. This report shares that many people study the types of married and unmarried

structures, vs. the different parenting styles or even cultural differences. Studies go as far to prove that parents who are educated vs. those who are uneducated and even parents who work or have a parent who stays home may be better than the other. In the end, the best family is a family that functions well, not that one way is better than the other. This gives power to the program I teach as it works with parents to function well and for the parents themselves to decide what works best instead of having the court decide for them. I have so many parents come in to share how their structure is better than their ex's structure and I don't believe it. With this study, I have proven facts to share with them to help them move forward to help their child.

***Reference 2:***

Sun, Y., & Li, Y. (2009). Postdivorce family stability and changes in adolescents' academic performance: A growth-curve model. *Journal of Family Issues*, 30(11), 1527-1555.  
doi:10.1177/0192513X09339022

Sun, & Li, (2009). report their analyses indicates that compared with peers who grow up in stable postdivorce families, children of divorce who experience additional family transitions during late adolescence make less progress in their math and social studies performance over time. This report shares how most researchers compare with family structure type as a reason for educational success with children from divorce in order to find the most stable type of structure.

This report shares that stability is the key to educational success namely math, no matter what type of structure. This means no matter if there is a two- parent home, two, one parent homes, cohabitation of both parents, married or not or other type, the child has more success in a stable environment. This report throws out all other reports that state otherwise. Frequency of transitions remarriages, other relationships were also

measured. This study did not specify the results of shared parenting or 50/50 where the children rely on their own parents more than the other adults in their homes during transitions.

**Reference 3:**

Kim, H. S. (2011). Consequences of parental divorce for child development.

*American Sociological Review*, 76(3), 487-511. doi:10.1177/0003122411407748

It was shared that patterns of successful or failure when measuring achievements in children are not only because of divorce, but the amount of conflict in marriage has been documented to contribute as well. Some parents who want to separate stay together to keep their children stable in their educational goals, while other parents decide it is ok to separate because their child is resilient and can withstand separation of their parents. The outcomes of these studies showed the challenges of younger children were able to be repaired as the children got older if the separation happened when the children were between the ages of young children and adolescence. Some say that children in bad divorces will never recover, while other reports say all children will recover.

**Reference 4:**

Children of divorce fall behind peers in math, social skills. (2011).

*NewsRx Health & Science*, , 58.

Once again math comprehension is one of the items mentioned as a downfall for children while their parents are going through a divorce. This study shows the trouble during the divorce, not before. Once the divorce is over children's have the ability to catch up to other children who are also in separated homes, but not to children of intact homes, Kim

says in the article from Children of divorce fall behind peers in math, social skills. (2011). It is also reported that the children are not totally resilient as some say.

***Reference 5:***

Peters, NetLibrary, I., ebrary, I., & Books24x7, I. (2008). Overcoming school

anxiety: How to help your child deal with separation, tests, homework, bullies, math phobia, and other worries. New York: AMACOM, American Management Association.

Divorce is listed as one of the family issues that lead to school anxiety, “changing family dynamics is necessary to help your child conquer anxiety and succeed in school.” Peters (2008).

The report expresses showing how you deal with stress so they can mock a positive response, talk and problem solve with them to help them feel confident while making time with them a priority. These types of coping skills are needed for their future independence. This type of worry may be because of anxiety. Once anxiety kicks in students become avoidant and skip out on homework, tests, opportunities and even schoolwork. At this point math and reasoning are the first skills hurt.

**Review Learning Theory Association**

Theories show pre- and young- adolescent educational outcomes for mathematic comprehension is greater with families who function well regardless of family structure. When families who do not function well have early intervention in the school district with counselors, instructors or programs specifically math comprehension does not suffer as much as others in separated homes that function well.

Families who function well may be described as Co-parenting or parallel parenting. Parents who do not work well together and create toxic stress in the home may counter-parent or have forms of parental alienation. With early support from the schools, student's schoolwork may not be affected by the separation and the toxic stress that follows divorce.

### **Definitions**

1. *Divorce* - law, the action or an instance of legally dissolving a marriage.

Merriam Webster Dictionary, (2020), Retrieved from <https://www.merriam-webster.com/dictionary/divorce>

2. *Separation* - cessation of cohabitation between a married couple by mutual agreement or judicial decree.

Merriam Webster Dictionary, (2020), Retrieved from <https://www.merriam-webster.com/dictionary/separation>

3. *Separated parenting styles* - The difference between the levels of co-parenting, parallel parenting, Counter parenting and Parent alienation which is used in the Tranquil Parenting program to help parents determine the type of atmosphere created for their children in separated/divorced homes.

Howell, S., L. (2018) Separated parenting technique scale (22), *Michigan Parenting Magazine*

4. *Co-parent* - a person (such as a noncustodial parent or cohabiting partner) who shares parental duties with a custodial parent.

Merriam Webster Dictionary, (2020), Retrieved from <https://www.merriam-webster.com/dictionary/co-parent>

5. *Parallel parenting* - Parallel parenting is an arrangement in which divorced parents are able to co-parent by means of disengaging from each other, and having limited direct contact, in situations where they have demonstrated that they are unable to communicate with each other in a respectful manner.

Kruk, E., (2103), Parallel parenting after divorce making co-parenting work in high-conflict families., Psychologytoday.com Retrieved from

<https://www.psychologytoday.com/us/blog/co-parenting-after-divorce/201309/parallel-parenting-after-divorce>

6. *Counter parenting* - Counter-parenting is when parents maintain their hate and anger deriving from the divorce. They are unable to forgive each other, and every encounter with an ex reminds him or her of the hate they have for them. This could cause some acts of revenge and even working against each other. In other words, counter parenting is not conducive for a co-parenting situation, making it difficult for everyone involved.

Tracton,, M., D., (2017) How counter-parenting harms co-parenting. Retrieved from

<https://www.tractonlaw.com/blog/2017/12/how-counter-parenting-harms-co-parenting/>

7. *Parent alienation* - Parental alienation occurs when a child refuses to have a relationship with a parent due to manipulation, such as the conveying of exaggerated or false information, by the other parent. The situation most often arises during a divorce or custody battle, but it can happen in intact families as well.

Kruk, E., (2107), Parental Alienation: What is the solution? A call to action to combat and eliminate parental alienation., Psychologytoday.com Retrieved from

<https://www.psychologytoday.com/us/basics/parental-alienation>

8. *Student outcomes* - The term student outcomes typically refers to either (1) the desired learning objectives or standards that schools and teachers want students to achieve.

Glossary of Education Reform, (2013) Retrieved from

<https://www.edglossary.org/student-outcomes/>

9. *Toxic stress response* – Toxic stress response can occur when a child experiences strong, frequent, and/or prolonged adversity—such as physical or emotional abuse, chronic neglect, caregiver substance abuse or mental illness, exposure to violence, and/or the accumulated burdens of family economic hardship—without adequate adult support. This kind of prolonged activation of the stress response systems can disrupt the development of brain architecture and other organ systems and increase the risk for stress-related disease and cognitive impairment, well into the adult years.

Harvard University, (2020) Center on the Developing Child, Toxic stress. Retrieved from

<https://developingchild.harvard.edu/science/key-concepts/toxic-stress/>

### **Gaps in Research**

From my findings, I recommend studies on the specific parenting styles and family functioning using the Separated Parenting Scale (Howell 2018) be compared to the resilience some children have already while measuring mathematics comprehension since family function was more important than family structure according to Lin, Washington-Nortey, Hill, and Serpell, (2019).

### **Biblical Worldview**

A Christian perspective on children’s educational achievements may be described by this quote shared by Jacobs, D., (2015), “Parents of academically successful children consider it their mission in life to help their children be successful.” (Hoover-Dempsey & Sander, 1995).

“Trauma has become an increasingly prevalent topic in Christian education today. We understand trauma as occurring when a powerful experience overwhelms a person’s ability to

cope. Trauma does not discriminate. It impacts children regardless of race, socio-economic status, religion, or family systems.”

Honor your father and your mother: that your days may be long on the land which the LORD your God gives you. (Exodus 20:12) This says to honor both parents and speaks of taking care of what your parents have set for you. My interpretation is that you are gifted to learn the ways and if you honor your parents that gift will be yours. With parents who are separated, I believe it is the child’s right to be allowed to honor both and learn from both without stress and appreciate them both as in the book of Exodus. If the parents do not allow this respect, the parents are cruel to their child and are guilty of taking away the gifts God has to offer through the parents.

### **Summary of Issues**

The schools have the issues of not knowing exactly what to do with separated parents who have non-functioning families and how much they should be involved, yet the schools have the responsibility to teaching learners who are not ready and available to learn during moments of toxicity in the children’s lives. No one seems to have a consistent way to help these students or where to even begin since every school administrator can create their own policies or disregard the subject all together.

The schools are surprised with the symptoms of the toxic stress when it happens because they do not have a consistent way to measure and document which students are affected in a timely manner to initiate a plan of action for each child. Children of different ages and personalities will require unique assistance depending on their levels of stress and ability to comprehend mathematical equations.

**Conclusion**

Schools can help students achieve higher levels of mathematic comprehension that are failing due to toxic stress from their parent's low ability to function well in their separated family structure. First the teachers need to know what level of functioning the lower functioning families are in and next what style to use while helping the students who need assistance through their counselors or teachers depending on their ability to become resilient enough to become at a level high enough to match other students from separated homes with parents who co-parent well.

### References

- Brand, J. Moore, R., Song, X. & Xie, Y. (2019) *Parental divorce is not uniformly disruptive to children's educational attainment*. PNAS : Proceedings of the National Academy of Sciences of the United States of America. 116.15 (2019): 7266–7271. Web.
- Children of divorce fall behind peers in math, social skills. (2011).  
*NewsRx Health & Science*, , 58.
- Froiland, J. M., & Davison, M. L. (2014). Parental expectations and school relationships as contributors to adolescents' positive outcomes. *Social Psychology of Education: An International Journal*, 17(1), 1-17.  
doi:<http://dx.doi.org.ezproxy.liberty.edu/10.1007/s11218-013-9237-3>
- Garbacz, S. A., Zerr, A. A., Dishion, T. J., Seeley, J. R., & Stormshak, E. (2018). Parent educational involvement in middle school: Longitudinal influences on student outcomes. *The Journal of Early Adolescence*, 38(5), 629–660.  
<https://doi.org/10.1177/0272431616687670>
- Garvin, J. (1984). *Children of divorce - A challenge for middle school teachers*. Middle School Journal, 16(1), 6-7.
- Hudley, C. & Eskeles., A., (2008) Gottfried. Academic motivation and the culture of school in childhood and adolescence . Oxford: *Oxford University Press*
- Jacobs, D., (2015) How families influence academic achievement in Christian schools  
Retrieved from <https://www.bjupress.com/resources/articles/t2t/families-influence-academic-achievement.php>
- Juvonen, J., Le, V.-N., Kaganoff, T., Augustine, C., & Constant, L. (2004). *Focus on the wonder*

- years: Challenges facing the American middle school*. Santa Monica, CA: Rand.
- Keller, B. (1997). Divorce increasingly puts schools in the middle of family conflicts. *Education Week*, 16(28), 1.
- Kim, H. S. (2011). Consequences of parental divorce for child development. *American Sociological Review*, 76(3), 487-511. doi:10.1177/0003122411407748
- Lin, Y., Washington-Nortey, P., Hill, O. W., & Serpell, Z. N. (2019). Family functioning and not family structure predicts adolescents' reasoning and math skills. *Journal of Child and Family Studies*, 28(10), 2700-2707. doi:10.1007/s10826-019-01450-4
- Peters, NetLibrary, I., ebrary, I., & Books24x7, I. (2008). *Overcoming school anxiety: How to help your child deal with separation, tests, homework, bullies, math phobia, and other worries*. New York: AMACOM, American Management Association.
- Rothon, C., Goodwin, L. & Stansfeld, S. (2012), Family social support, community "social capital" and adolescents' mental health and educational outcomes: a longitudinal study in England. *Soc Psychiatry Psychiatric Epidemiol* 47: 697.  
<https://doi-org.ezproxy.liberty.edu/10.1007/s00127-011-0391-7>
- Sprinthall, N., Hall, J., & Gerler, E. (1992). *Peer counseling for middle school students experiencing family divorce: A deliberate psychological education model*. *Elementary School Guidance & Counseling*, 26(4), 279-294.
- Sun, Y., & Li, Y. (2009). Postdivorce family stability and changes in adolescents' academic performance: A growth-curve model. *Journal of Family Issues*, 30(11), 1527-1555. doi:10.1177/0192513X09339022

Winkle, B., Educating students impacted by trauma. Retrieved by

<https://allbelong.org/educating-students-impacted-by-trauma/>

Wood, J. J., Repetti, R. L., & Roesch, S. C. (2004).

*Divorce and children's adjustment problems at home and school: The role of depressive/withdrawn parenting.* Child Psychiatry and Human Development, 35(2), 121

42. doi:http://dx.doi.org.ezproxy.liberty.edu/10.1007/s10578-004-1881-6