



Examining and Improving Classroom Environments Through the Lens of Self-Determination Theory

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Abstract

Physical built environment conditions affect occupants' health, attitudes, motivations, and general well-being. The state of classrooms is no exception. Classroom conditions have direct effects on teachers and students and ultimately on academic outcomes. In addition to the physical condition of classrooms, the atmosphere of the environment, which is established mostly by the choices and attitudes of educators, has a profound influence on students. Classrooms differ vastly in both physical conditions and social atmospheres. The remedy for the physical differences has been discussed and debated for years, and can be summarized predominantly through equalizing funding. The purpose of this paper is to offer another angle of investigation on identifying and closing the environmental gap by focusing on the whole environment, not just the brick and mortar portion. The angle being proposed is that of using Self-determination theory (SDT)¹ to equalize the environmental experiences of students. SDT is a macro theory of human motivation, development, and wellness.² SDT studies social conditions, such as those created in classrooms, by examining how environments are either supporting or thwarting basic psychological needs. SDT defines the basic psychological needs as autonomy, competence, and relatedness. I propose that using the lens of SDT to study and categorize the most detrimental classroom environmental disparities will spark ideas to establish an effective plan to remediate those disparities.

Keywords: *learning environments; classroom atmosphere; self-determination theory; equality; equity*

Introduction

Educators, researchers, and policy makers are continually examining methods to close the achievement gap and help more students succeed. I agree this is a noble goal and propose one effective avenue would be to identify methods and establish policies and procedures that work to reduce classroom environment disparities between and within schools. Classroom environments will always vary; however, the quality should not be so drastically different that an observer can immediately identify one environment as high quality and another environment as low. The intention behind this essay is to show through research that classroom environment conditions both

1. Richard M. Ryan and Edward L. Deci, *Self-Determination Theory: Basic Psychological Needs in Motivation, Development, and Wellness* (New York: Guilford Publications), 2017, 3.

2. Ibid.

physical and those created by the school and classroom culture are contributing to the achievement gap and that even if the physical environment cannot be rebuilt, restructured, or repaired, educators can be made aware of the effects and receive professional development on how to use the methods of Self-Determination Theory (SDT) to improve the environments in which they are working and teaching.

Many teachers and students find themselves in safe, clean, well maintained, and even attractive schools while many others are denied the same opportunity. The physical and climate related factors of classrooms, which are linked to student outcomes and which are known to be disparate, will be explored through the perspective of meeting the basic physical needs of safety and comfort, and the basic psychological needs of autonomy, competence, and relatedness as identified through SDT.³ For the purposes of this paper the definition of classroom environments will be the shared perceptions of the students and teachers.⁴

Studies abound about the different conditions and achievement levels of schools. Carter and Welner argue the achievement gap is linked to the opportunity gap, which includes the opportunity to learn in a clean safe school with adequate resources and opportunities for advancement.⁵ School funding disparities are at the center of unequal school facilities as well as the unequal quality of teachers who establish the social environments. Carter and Welner state, “Nationwide, school finance disparities continue to seriously undermine the mission of this country’s public schools. Eliminating these disparities must be a priority if our goal is to successfully educate this generation of children to compete and win in the global marketplace.”⁶ What is most devastating is schools with children from low-income communities consistently have less capital funds for school facilities⁷ and are often unable to recruit or retain highly qualified teachers.⁸ Evidence suggests teachers do not want to begin or remain teaching in education facilities in poor condition.⁹

Parsons and Turner state, “Educational inequality and inequity have emerged and reemerged in various forms throughout U.S. history as overt acts of prohibition of some groups to be educated to more subtle manifestations like inadequate instructional facilities or scant course offerings in a school’s curriculum with people of color more likely to be subjected to these conditions.”¹⁰ Public education funding in urban and rural areas is often worse than in suburban areas as distribution is not based on need but rather funding formulas and local revenue. Wright reports, “Students are taught in schools that do not have the funding capable of producing comparable learning environments, to their counterparts.”¹¹ More money is spent on school construction for new or growing communities than on schools in older communities, both urban and rural, where a larger population of low-income students attend.¹²

3. Ibid.

4. Barry J. Fraser, *Classroom Environment*. Vol. 234. (New York: Routledge, 2012), 1.

5. Prudence L. Carter and Kevin G. Welner, eds., *Closing the Opportunity Gap: What America Must do to Give Every Child an Even Chance*. (New York: Oxford University Press, 2013), 1-10.

6. Ibid.

7. Mary W. Filardo, Jeffrey M. Vincent, Ping Sung, and Travis Stein. "Growth and Disparity: A Decade of US Public School Construction." *21st Century School Fund* (2006): 20-21.

8. Eileen Lai Horng, "Teacher tradeoffs: Disentangling teachers' preferences for working conditions and student demographics." *American Educational Research Journal* 46, no. 3 (2009): 690-717.

9. Jack Buckley, Mark Schneider, and Yi Shang, "Fix it and they might stay: School facility quality and teacher retention in Washington, DC." *Teachers College Record* 107, no. 5 (2005): 1107-1123.

10. Parsons and Turner, "The Importance of History," 99.

11. Wright. "The Disparities Between," 1616.

12. Filardo et al., "Growth and Disparity," 15.

Stated another way, the students coming from the poorest households often attend schools with the poorest education facilities conditions and the least quality teachers. A cycle is often created that contributes to the widening achievement gap because schools with higher achievement often get more finances from the federal government.¹³ Carter and Welner emphasize how these unequal conditions are affecting student achievement as students in satisfactory conditions achieve higher than students in fair or poor conditions.¹⁴ Public education could be improved by establishing true equality, which would mean all students would have access to the same quality of education, and by striving for equity, which would mean resources, including classroom environments and high quality teachers, would be utilized to equalize and create equality.¹⁵ I propose a plan to consider the use of professional development in SDT to help educators, especially those in the most high needs schools, to establish an environment to increase the well-being of their students even if funding is limited to improve the physical features of the school. I am not discarding the evidence that solving the funding disparities and improving school facilities should be abandoned, I am however, suggesting while those battles continue to be fought, there are other options that can be considered to improve the classrooms that students are required to attend.

This paper will cover a brief explanation of SDT and why it is an appropriate theoretical lens to examine and adjust for disparities; the current state of school facilities across the United States; and classroom environments as established by teachers' styles of instruction and motivation. After this brief review of research, the questions addressed in the paper will include, (1) What are the effects of poor school building conditions, specifically classroom conditions? (2) What are the effects of the classroom environment established by teachers' pedagogical choices and motivations on basic psychological needs? (3) What can be done to remedy the current situation and equalize the learning environments and therefore improve student outcomes?

Self-Determination Theory

Self-determination theory (SDT) is a theory of motivation, human development, and well-being.¹⁶ SDT establishes types and quality of motivation rather than strictly quantity. The types of motivation are broadly described as either intrinsic or extrinsic. Intrinsic motivation by the nature of it coming from within individuals is autonomous and generally promotes well-being, whereas extrinsic motivation generally comes from outside of the individual and varies in contribution to well-being.

According to Ryan and Deci, intrinsic motivation derives from personal interest in and enjoyment of an activity and extrinsic motivation derives from external circumstances such as consequences, rewards, approval, etc.¹⁷ Whereas intrinsic motivation is a high-quality motivation often leading to higher levels of well-being, extrinsic motivation varies in quality with the level of internalization and integration that has taken place within each individual. More internalized and integrated types of extrinsic motivation are naturally more autonomous and thus healthier for the person. If a person feels controlled by external forces, even benevolent ones, the situation can lead

13. Wright, Whitney, "The Disparities Between Urban and Suburban American Education Systems: A Comparative Analysis Using Social Closure Theory." 2012 NCUR (2013).

14. Carter and Welner, eds., *Closing the Opportunity Gap*, 1-10.

15. Eileen Carlton Parsons and Kea Turner, "The Importance of History in the Racial Inequality and Racial Inequity in Education: New Orleans as a Case Example." *Negro Educational Review* 65, no. 1-4 (2014), 99-113.

16. Ryan and Deci, *Self-Determination Theory*.

17. *Ibid.*

to detrimental effects on motivation and well-being.¹⁸ What is important to understand for the discussion of this paper is extrinsic motivation can be based on external controls individuals feel autonomy to choose between or external controls individuals feel obligated to choose between. The former is healthier and promotes better quality behaviors whereas the latter can produce less healthy behaviors or even lack of motivation.¹⁹

In addition to identifying the different types of motivation, SDT defines three basic needs that must be fulfilled for an individual to have the most autonomous and therefore the most sought-after types of motivation. These needs are autonomy support, feelings of competence, and feelings of relatedness. Even if people are not intrinsically motivated for an activity, if their basic psychological needs are being met, the chance of healthy motivation and positive well-being increases. The opposite is true. If people's basic psychological needs are not being met then motivation becomes less autonomous and well-being decreases.

Table 1: Basic Psychological Needs as stated by Ryan and Deci²⁰

Basic Need	Definition
Autonomy	Self-endorsement, ownership, and self-regulation
Competence	Development of skills, understanding, and mastery
Relatedness	Connection and involvement with others

SDT examines motivational types as the basic psychological needs are being supported or thwarted through the setting, the environment, and interactions with others. Whereas this paper will examine the effects of school facility conditions, solely looking at the physical built environment falls short in determining the environment, as relations between teachers and students play a critical role in establishing the environment. Students in classroom environments meeting their basic psychological needs are more apt to have positive well-being and higher quality motivation and ultimately higher academic success than students in classrooms that thwart the basic psychological needs. Teachers can be equipped through professional development in SDT to make better choices in their teaching and interactions to improve classroom environments, whether or not the physical classroom conditions are being altered.

School Facility Conditions

Classroom facilities consist of the design and condition of the physical elements that make up the spaces as well as the furniture and resources available. Differences in classrooms are apparent to anyone entering more than one school or even at times classrooms within the same school. Many schools are built with modern or even state-of-the-art architecture and equipment and many others have holes in the ceilings and visible mold on walls and floors. Arguments are futile that the physical design and condition of classroom factors are equal throughout the United States, however, it may be helpful to review data identifying the gross inequalities and poor conditions found in many schools.

According to the National Center for Educational Statistics in 2012, 53 percent of public schools are in need of repairs, renovations, and modernizations to be in satisfactory condition.²¹ The areas most in need of improvements included, windows (32%), plumbing/lavatories (31%),

18. Ibid.

19. Ibid.

20. Ibid.

21. Debbie Alexander, and Laurie Lewis, "Condition of America's Public School Facilities: 2012-13. First Look. NCES 2014-022." National Center for Education Statistics (2014).

HVAC (30%), energy management, security, and exterior lighting (29% each), roofs, interior finishes/trim, and internal communication systems (25%), electrical systems (22%), technology infrastructure (21%), interior lighting and life safety features (19%), exterior walls/finishes (18%), and framing, floors, and foundations (14%).²² In certain cases school facility conditions are so dilapidated educators are unable to provide clean, safe, and comfortable learning environments.

In 2013, a separate evaluation of school facilities was conducted by the American Society of Civil Engineers.²³ These experts gave the grade of “D” to the nation’s schools. The meaning of this grade is defined as “below standard,” “significantly deteriorate(d),” and “of significant concern with a strong risk of failure.”²⁴ This clearly shows although many students are in safe clean schools, many are not.

Jonathan Kozol told of schools he visited while researching for his book *Savage Inequalities* without heat or air conditioning, without working plumbing, with holes in the ceilings, and with many other deplorable conditions.²⁵ Many of the classes Kozol described did not even have their own rooms and many rooms did not even have windows. One example he shared was of a class of second graders who were forced to share a single classroom with sixth graders, simply because the school was not equipped for the current population. He discussed one school meeting in an old skating rink because no actual school building existed in the neighborhood. He also told of schools that were or should have been condemned yet were still being occupied for education purposes.

It also must be stated that classroom conditions can vary drastically even within the same school. Within one school a special education teacher may be forced to hold her class in a storage closet instead of an actual classroom due to the overcrowding of the school. Within another school one or more classrooms could be water damaged from leaking or flooding, whereas others are not negatively affected. Another area of disparity within classrooms is the distribution of technological resources. Not all schools and not all classrooms within the same school building have equal distribution of technology.

In addition to the physical structure, health and cleanliness of the built environment, climate control concerns, and available technology, many classrooms were not designed to be flexible, which can make them more conducive to modern modes of teaching.²⁶ The facts speak clearly; school facility conditions are not equal. Depending on where students attend school they may enter a beautiful, clean, well-designed building, or they may enter a run-down, graffiti filled building designed before modern teaching methods and technology were considered.

Classroom Environments Created by Teacher Choices

Just as the physical classroom conditions vary, so do the environments created by pedagogical and motivational choices made by the teachers. Teachers’ styles fall on a continuum between choices that feel controlling to the students and those that feel autonomy supportive.²⁷ Many educators have been trained to use extrinsic motivators such as grades, rewards, and comparisons to manage their classrooms and entice their students to perform rather than being trained to tap

22. Ibid.

23. ASCE, 2013 Report Card for America's Infrastructure. 2013.

24. Ibid.

25. Jonathan Kozol, *Savage Inequalities: Children in America's Schools*. Broadway Books, 2012.

26. Angel Ford, "Planning Classroom Design and Layout to Increase Pedagogical Options for Secondary Teachers." *International Journal for Educational Planning*, 23, no. 1 (2016).

27. Ryan and Deci, *Self-Determination Theory*.

into the internal motivations of curiosity and the love of learning.²⁸ Extrinsic motivators often feel controlling to the students. Attempting to aide student internalization of the desire to learn, rather than attempting to motivate students with external rewards could create a more effective classroom environment.²⁹ Behaviors perceived as supportive of student autonomy, encouraging of students' competence, and genuinely interested in relationship building are experienced as less controlling and have been found to correlate with healthier forms of motivation and better well-being.³⁰

As the quality of teaching choices changes, so do students' opinions of the school, thus from kindergarten through college, the quality of the teachers determine students' perceptions of the quality of the school.³¹ Whitaker states the most important variable in the classroom is the teacher and great teachers take responsibility for what goes on in their classes.³² He goes on to state principals should take responsibility for the atmosphere and culture in their schools and should empower teachers to take responsibility for the atmospheres of their classrooms. Since evidence shows if teachers feel more supported, they are more encouraging to their students,³³ professional development that reinforces their importance and ability to make the right choices is one way to encourage teachers to create the best atmospheres of encouragement for their students. Whitaker discusses how strong and empowered teachers change the culture for the better whereas weaker teachers are changed by the culture.³⁴ Educational leaders would do well to empower teachers that desire and have a plan to change the culture for the better. It takes empowering and autonomy support to encourage teachers to try new techniques both for teaching methods and classroom management. Another way Whitaker encourages school leaders to create a positive culture of growth within their schools is to hire passionate and innovative teachers rather than those desiring to do what has always been done.³⁵

Whether teachers are dynamic or not they are expected to work with curricula, either given to them or that they design, and the subject matter affects the curricula and methods a teacher can employ. An understanding needs to be shared that curricula is not often encouraging or motivating. Ryan and Deci state, "School curricula or materials are often not packaged to be intrinsically motivating, nor in any way made to be particularly meaningful or relevant to the students' daily lives or purposes."³⁶ Teachers understanding this will be more prepared to adapt their pedagogy and motivational styles accordingly and to make the lessons more meaningful and appealing to their students.

Not only is the curricula not always conducive to creating motivating lessons and classroom environments, the demands placed on teachers to get their students to perform for high stakes tests can also detract from a positive classroom atmosphere. Certain approaches to high stakes testing have also been shown to thwart basic psychological needs.³⁷ Whether or not students will be accountable to high stakes testing is determined outside of the classroom, however, it is how teachers decide to approach the demands placed on their students that makes the difference. High stakes testing promotes performance goals over mastery goals and a system built on performance

28. Ibid.

29. Ibid.

30. Ibid.

31. Todd Whitaker, *What great principals do differently*. New York: Eye On Education Incorporated, 2009. Chapter 2, paragraph 1.

32. Ibid.

33. Ryan and Deci, *Self-Determination Theory*, 351.

34. Whitaker, *What great principals do*.

35. Ibid.

36. Ryan and Deci, *Self-Determination Theory*, 352.

37. Ibid.

instead of mastery easily lends itself to promote external rewards perceived as controlling.³⁸ Whitaker emphasizes educational leaders and classroom teachers should not let testing take over the agenda of the school.³⁹

There are endless pedagogies teachers choose creating the atmosphere in their classrooms. Certain pedagogies feel empowering and appropriately motivating to students and others feel controlling. Professional developments can be established informing teachers how to create optimal classroom environments through SDT considerations.

Effects of Built Learning Environments

Question: What are the effects of poor school building conditions, specifically classroom conditions?

Evidence has been presented that establishes the disparities in the physical learning environments teachers and students occupy throughout the United States. Evidence is also plentiful that poor built or maintained learning environments have a negative effect on students' attitudes, behaviors, and learning outcomes.⁴⁰ Cheng, English, and Filardo reported, "States have recognized the detrimental effect of poor quality school facilities, citing disparities in school facilities as a violation of student rights and as evidence of the need for change in the school funding formula."⁴¹ Studies have determined not all students feel safe in their classrooms and not all classrooms are climate controlled for comfort or have the appropriate seating and resources to accommodate all the students.⁴² Uline et al, found a connection between the built environment and the overall school climate or atmosphere, and they found evidence disorder and neglect can cause social disarray and anxiety for students.⁴³

A study conducted in Virginia showed students scored higher in subjects, including science, when in satisfactory buildings compared to students in unsatisfactory buildings.⁴⁴ A study conducted in Los Angeles found when facilities were improved academic performance also improved.⁴⁵ Another study in Texas provided evidence academic achievement was higher in schools in the best conditions as opposed to schools in the worst conditions.⁴⁶ "In a set of 20 studies analyzed by 21st Century School Fund, all but one study showed a positive correlation between the achievement of students and the condition of the school facility once student demographic factors

38. Ryan and Deci, *Self-Determination Theory*, 352.

39. Whitaker, *What great principals do*. Chapter 10, paragraph 14.

40. Glen I. Earthman, and Linda K. Lemasters. "The Influence of School Building Conditions on Students and Teachers: A Theory-Based Research Program (1993-2011)." *The ACEF Journal* 1, no. 1 (2011): 15-36.

41. Gracye Cheng, Steve English, and Mary Filardo, "Facilities: Fairness and Effects: Evidence and recommendations concerning the impact of school facilities on civil rights and student achievement." Washington, DC: 21st Century School Fund (2011): 1.

42. Kozol, *Savage Inequalities*.

43. Cynthia L. Uline et al., "Improving the physical and social environment of school: A question of equity." *Journal of school leadership* 20, no. 5 (2010): 597-632.

44. C. C. Bullock, (2007). *The relationship between school building conditions and student achievement at the middle school level in the Commonwealth of Virginia* (Doctoral dissertation, Virginia Polytechnic Institute and State University).

45. J. Buckley, M. Schneider, and Y. Shang, "Los Angeles unified school district school facilities and academic performance," (Washington, DC: National Clearinghouse for Educational Facilities. 2004).

46. J. M. Blincoc, *The age and condition of Texas high schools as related to student academic achievement*. (Unpublished doctoral dissertation). The University of Texas at Austin. (2008).

were controlled for.”⁴⁷ Generally, evidence suggests the condition of school facilities affects the occupants’ attitudes and performance.⁴⁸

In addition to the effects on attitudes and academic achievement, the built environment can affect the basic psychological need of autonomy simply by limiting the teaching methods that can be employed.⁴⁹ A clear example of this is a science teacher teaching chemistry in a classroom without a lab. This teacher will be limited in the choices for lab demonstration, which evidence shows affects the enjoyment and value students place on the subject.⁵⁰ Another common obstacle to teachers’ autonomy in pedagogical choices is the layout of the classroom.⁵¹ Teachers unable to adapt the physical structure and layout of their classrooms are often limited in the pedagogies they can use to engage their students. Flexible classroom layouts and those conducive to active forms of teaching and learning promote a variety of teaching methodologies and ultimately promote academic success.

Another area the built environment can hinder the basic psychological needs is in relatedness. If a classroom is stuck in a traditional design with rows of desks and a teacher at the head of the class, simple layout changes can create an atmosphere more favorable to a variety of teaching methods promoting collaboration and relationship building.⁵² Classrooms set up in a traditional manner are not as conducive to relationship building as those with soft learning spaces, tables for group work, or even plenty of room for the educators to move around and be near different students at distinctive points throughout the lessons. In a traditional classroom setting, the students in the back may feel disconnected from the teacher, whereas in flexible learning spaces relationships are more easily formed and nurtured.

The premise of this paper is to build upon studies and ideas and suggest a connection between the conditions of the built environment and the perception of whether the basic psychological needs are supported or thwarted. The following questions should be asked: (1) Do teachers have spaces that offer them autonomy in choosing pedagogical methods or are they hindered by the spaces they find themselves teaching in? (2) Are the classrooms spacious and flexible enough for a variety of learning methods to engage all learning styles? (3) Do learning spaces offer environments for teachers to move around and get to know their students and even to allow their students to work together building relationships with one another? These are a sample of questions to ask when examining the built environments through the lens of basic psychological needs.

Effects of Teachers’ Choices and Motivational Styles

Question: What are the effects of the classroom environment established by teachers’ pedagogical choices and motivations on basic psychological needs?

As discussed with the previous questions, some teacher choices are limited by the physical classrooms they are assigned to, however, we will now explore teacher choices that can be made regardless of the built environment they find themselves in. Teachers’ choices and motivational styles have an effect by establishing the classroom atmosphere and mood. Ryan and Deci tell us

47. Cheng, Gracye, Steve English, and Mary Filardo. "Facilities: Fairness and Effects: Evidence and recommendations concerning the impact of school facilities on civil rights and student achievement." Washington, DC: 21st Century School Fund (2011): 3.

48. Earthman and Lemasters. "The Influence of School Building Conditions."

49. Ford. "Planning Classroom Design."

50. Ford, Angel and Philip Alsup. "Planning Science Classroom Facilities and Resources to Improve Student’s Attitudes." *International Journal of Educational Planning* 24, no. 4 (2017): 27-48.

51. Ford, "Planning Classroom Design."

52. *Ibid.*

“classroom climates supporting autonomy, providing high structure, and conveying relatedness and inclusion foster personal well-being and feelings of connection to one’s school and community.”⁵³ Ryan and Deci also state, “Pervasive psychological experiences impact the brain, predisposing certain motivational orientations and regulatory capabilities.”⁵⁴ In other words, a consistent environment that supports or thwarts self-determined motivation has effects even after the person has left the environment. Ryan and Deci suggest if students’ needs are being thwarted harm may be happening to them in the very context in which we require them by compulsive attendance to develop and learn.⁵⁵

If a supportive atmosphere is maintained, then students exhibit higher academic success and creativity.⁵⁶ Ryan and Deci state, “Teachers who are autonomy-supportive effectively facilitate intrinsic motivation, often despite the external demands and pressures on them, and they remain concerned with the points of view, initiative, and choices of the students they teach.”⁵⁷ Evidence shows a little autonomy support and relatedness within the classroom may go a long way.⁵⁸ In addition to studies that show changes in student behavior and success based on SDT, studies have been conducted demonstrating biological evidence. Students in less autonomy supportive classrooms tend to have more stress chemicals as found in their saliva.⁵⁹ If students are in a negatively controlled classroom environment they exhibit physical evidence of the adverse feelings they experience.

This shows that students who are continually going to classrooms that do not have atmospheres supportive of the basic psychological needs of autonomy, competence, and relatedness are at a disadvantage to those that do.⁶⁰ First, if teachers are perceived as controlling and limiting pedagogies to those perpetuating control, students will not feel autonomy support. Second, if teachers do not encourage and help students to feel competent, students will be less motivated to put forth the effort necessary to learn. Lastly, if students feel little to no relationship with their teachers, they will be less likely to have the appropriate motivation to achieve academic success.

What Can Be Done?

Question: What can be done to remedy the current situation and equalize the learning environments and therefore improve student outcomes?

In short to answer this question, the built environment and teacher quality need to be improved in many schools around the nation to improve classroom environments. This however is much easier stated than accomplished; therefore, we need to dive deeper and come up with additional alternatives. One way to continue to expand available options would be to conduct studies that provide effective classroom techniques to support the basic psychological needs of students to increase students’ self-determination according to SDT.

Before going on to future studies that would be helpful, the short answer can be expanded. Funding undoubtedly has a major impact on most school improvements, including building, retrofitting, or remodeling schools or learning spaces and hiring and maintaining a high-quality

53. Ryan and Deci, *Self-Determination Theory*, 18.

54. *Ibid*, 7.

55. *Ibid*.

56. *Ibid*, 351-381.

57. *Ibid*, 356.

58. *Ibid*, 357.

59. Johnmarshall Reeve, and Ching-Mei Tseng. "Cortisol Reactivity to a Teacher’s Motivating Style: The Biology of being Controlled Versus Supporting Autonomy." *Motivation and Emotion* 35, no. 1 (2011): 63-74.

60. Ryan and Deci, *Self-Determination Theory*, 7.

teaching faculty. In an ideal situation, state general funding would make up for the needs in high poverty areas and need adjusted aid would provide increased assistance for students with the greatest needs.⁶¹ This is not the case. State aid formulas are supposed to help. They often do not.⁶² Allocations are not based on student need; therefore lower-poverty districts still end up with more funding. Baker and Corcoran state, “The sad reality is that gross funding inequities continue to exist in this country, and too often the schools serving students with the greatest needs receive the fewest resources.”⁶³ In this context this means students with the greatest needs are often attending schools with the least effective learning environments. To equalize learning environments and give all students the same opportunities to excel, unequal funding must be addressed.

Putting aside the funding concerns as they are much more complicated than can be addressed in this essay, we will move on to ways to identify and put into place actions known to increase the well-being of students based on SDT. Reeve and Jang conducted a study and created a list of teacher behaviors found to either promote autonomous or controlled motivation.⁶⁴ Among the behaviors they found to support autonomy were increased time listening to students, increased time allowing students to work in their own way, praising students for informational feedback, offering encouragement to students, and being responsive to the questions students ask.⁶⁵ Among the behaviors they found to thwart autonomy were time holding or monopolizing learning materials, uttering directives or commands, making should or have to statements, and asking controlling questions.⁶⁶ Studies that extend this understand and professional development based on the findings could empower teachers to improve their classroom environments and their students’ well-being and academic success. Simply introducing this list and giving examples for educators to try could improve classroom environments. Another way these types of lists could be used in through feedback given after classroom observations. Using real scenarios to train teachers to employ the effective methods and refrain from using methods found to be negative.

The need for professional development would require covering all areas of SDT as teachers may be need supporting in one area such as competence and need thwarting in another area such as autonomy support. Ryan and Deci tell us, “When individuals experience need-thwarting environments, such as contexts that are overly controlling, rejecting, critical and negative or that otherwise frustrate autonomy, relatedness, and competence needs, individuals are more likely to become self-focused, defensive, amotivated, aggressive, and antisocial.”⁶⁷ In order to produce healthy and motivational atmospheres in their classrooms, teachers may benefit from learning how to support and not thwart all three of the basic psychological needs.

Conclusion

There are classrooms that kindle the internal passions of students for learning and there are those that stifle students. Evidence has been presented on the disparities of school facilities and classroom environments as well as the effects of these different conditions. These inequalities contribute to the opportunity gap, which leads to the achievement gap. If all students were given

61. Bruce D. Baker and Sean P. Corcoran, "The Stealth Inequities of School Funding: How State and Local School Finance Systems Perpetuate Inequitable Student Spending." Center for American Progress (2012): 4.

62. Ibid.

63. Baker and Corcoran. "The Stealth Inequities," 1.

64. Johnmarshall Reeve and Hyungshim Jang. "What Teachers Say and Do to Support Students' Autonomy During a Learning Activity." *Journal of Educational Psychology* 98, no. 1 (2006): 209-217.

65. Ibid, 214.

66. Ibid, 214.

67. Ryan and Deci, *Self-Determination Theory*, 9.

the same chance, then we would truly know which ones would rise to the top. As it is now, with some students unable to access appropriate facilities and resources and in classrooms stifling their innate curiosity and willingness to learn, we do not truly know their potential. Unfortunately, data shows savage inequalities in school environments are prevalent with the poorest districts housing the poorest students, those already having increased obstacles for success.⁶⁸ The students from richer families are rising as though they are on escalators and the students from poor disadvantaged families are sinking as if in quick sand. Equality in education would mean all students would have access to the same quality of education through equal learning environments, and equity would mean resources would be used to equalize and create equality.⁶⁹

One way to equalize educational opportunities is to eradicate the vast differences in classroom environments, insuring all students are attending school in safe and clean buildings designed for learning and in classrooms supporting their basic psychological needs. Ultimately learning environments should be designed and maintained to meet the most basic of human needs and with consideration of the basic psychological needs as described by SDT. If the goal is to motivate and encourage development and wellness, then the factors discussed in this paper should be considered when examining ways to equalize classroom environments and contribute to the success of all students.

Ryan and Deci, through SDT give us a lens to examine the importance of environments and whether or not they are autonomy supportive, competency supportive, and relationally supportive.⁷⁰ They state,

(S)ocial contexts that support satisfaction of all three psychological needs also facilitate more autonomous functioning, which in turn yields more effective performance and greater wellness, whereas social contexts that fail to support and/or actively thwart these basic psychological needs tend to promote controlled motivation or amotivation, which in turn yields poorer performance and ill-being.⁷¹

Putting aside the need to improve school facilities for a moment, let us focus on what can be done to equip and empower teachers and improve the quality of classroom atmospheres they can create. Training teachers to use SDT as a means to promote the well-being of their students could quite possibly aid them in guiding their students around the obstacles they are unable to help them remove, such as the physical environment and their current socio-economic status. I am not proposing we disregard the need to improve the physical facilities, far from it, I am just proposing we also approach creating better classroom environments through training our teachers to use SDT to improve the feelings students have of autonomy, competence, and relatedness within the built environment they find themselves in. SDT is not the only answer, however, it will be another tool in the educators' toolbox that can be used to improve classroom atmospheres and thus student well-being and success.

68. Kozol, "Savage Inequalities."

69. Eileen Carlton Parsons and Kea Turner, "The Importance of History in the Racial Inequality and Racial Inequity in Education: New Orleans as a Case Example." *Negro Educational Review* 65, no. 1-4 (2014): 100.

70. Ryan and Deci, *Self-Determination Theory*.

71. *Ibid*, 17.

Bibliography

- ASCE. 2013 Report Card for America's Infrastructure. 2013.
- Abeyssekera, Lakmal, and Phillip Dawson. "Motivation and Cognitive Load in the Flipped Classroom: Definition, Rationale and a Call for Research." *Higher Education Research & Development* 34, no. 1 (2015): 1-14.
- Alexander, Debbie, and Laurie Lewis. "Condition of America's Public School Facilities: 2012-13. First Look. NCES 2014-022." National Center for Education Statistics (2014).
- Baker, Bruce D., and Sean P. Corcoran. "The Stealth Inequities of School Funding: How State and Local School Finance Systems Perpetuate Inequitable Student Spending." *Center for American Progress* (2012).
- Blincoe, James Maurice. The age and condition of Texas high schools as related to student academic achievement. The University of Texas at Austin, 2008.
- Bullock, Calvin. "The relationship between school building conditions and student achievement at the middle school level in the Commonwealth of Virginia." PhD diss., 2007.
- Buckley, J., Schneider, M., & Shang, Y. (2004). Los Angeles unified school district school facilities and academic performance. Washington, DC: National Clearinghouse for Educational Facilities.
- Buckley, Jack, Mark Schneider, and Yi Shang. "Fix it and they might stay: School facility quality and teacher retention in Washington, DC." *Teachers College Record* 107, no. 5 (2005): 1107-1123.
- Carter, Prudence L., and Kevin G. Welner, eds. *Closing the Opportunity Gap: What America Must do to Give Every Child an Even Chance*. New York: Oxford University Press, 2013.
- Cheng, Gracye, Steve English, and Mary Filardo. "Facilities: Fairness and Effects: Evidence and recommendations concerning the impact of school facilities on civil rights and student achievement." Washington, DC: 21st Century School Fund (2011): 192.
- Earthman, Glen I., and Linda K. Lemasters. "The Influence of School Building Conditions on Students and Teachers: A Theory-Based Research Program (1993-2011)." *The ACEF Journal* 1, no. 1 (2011): 15-36.
- Filardo, Mary W., Jeffrey M. Vincent, Ping Sung, and Travis Stein. "Growth and Disparity: A Decade of US Public School Construction." 21st Century School Fund (2006).
- Ford, Angel. "Planning Classroom Design and Layout to Increase Pedagogical Options for Secondary Teachers." *International Journal of Educational Planning* 23, no. 1 (2016): 25-34.
- Ford, Angel and Philip Alsup. (2017) "Planning Science Classroom Facilities and Resources to Improve Student's Attitudes." *International Journal of Educational Planning* 24, no. 4 (2017): 27-48.
- Fraser, Barry J. *Classroom Environment*. Vol. 234. New York: Routledge, 2012.
- Froiland, John Mark, and Frank C. Worrell. "Intrinsic Motivation, Learning Goals, Engagement, and Achievement in a Diverse High School." *Psychology in the Schools* 53, no. 3 (2016): 321-336.
- Hornig, Eileen Lai. "Teacher tradeoffs: Disentangling teachers' preferences for working conditions and student demographics." *American Educational Research Journal* 46, no. 3 (2009): 690-717.
- Jang, Hyungshim, Eun Joo Kim, and Johnmarshall Reeve. "Longitudinal Test of Self-Determination Theory's Motivation Mediation Model in a Naturally Occurring Classroom Context." *Journal of Educational Psychology* 104, no. 4 (2012): 1175.

- Kozol, Jonathan. *Savage Inequalities: Children in America's Schools*. City: Broadway Books, 2012.
- Núñez, Juan L., and Jaime León. "Autonomy Support in the Classroom." *European Psychologist* (2015).
- Parsons, Eileen Carlton and Kea Turner. "The Importance of History in the Racial Inequality and Racial Inequity in Education: New Orleans as a Case Example." *Negro Educational Review* 65, no. 1-4 (2014): 99-113.
- Raufelder, Diana, Frieder Kittler, Sarah R. Braun, Alexander Lätsch, R. Poppy Wilkinson, and Frances Hoferichter. "The interplay of perceived stress, self-determination and school engagement in adolescence." *School Psychology International* 35, no. 4 (2014): 405-420.
- Reeve, Johnmarshall, and Ching-Mei Tseng. "Cortisol Reactivity to a Teacher's Motivating Style: The Biology of Being Controlled Versus Supporting Autonomy." *Motivation and Emotion* 35, no. 1 (2011): 63-74.
- Reeve, Johnmarshall, and Hyungshim Jang. "What Teachers Say and Do to Support Students' Autonomy During a Learning Activity." *Journal of Educational Psychology* 98, no. 1 (2006): 209-217.
- Reeve, Johnmarshall, and Woogul Lee. "Students' Classroom Engagement Produces Longitudinal Changes in Classroom Motivation." *Journal of Educational Psychology* 106, no. 2 (2014): 527.
- Ryan, Richard M., and Edward L. Deci. *Self-Determination Theory: Basic Psychological Needs in Motivation, Development, and Wellness*. New York: Guilford Publications, 2017.
- Tanner, C.K. "Effects of School Architectural Designs on Students' Accomplishments: A Meta-Analysis." *Education Facilities Clearinghouse*, 2015.
- Uline, Cynthia L., Thomas Devere Wolsey, Megan Tschannen-Moran, and Chii-Dean Lin. "Improving the physical and social environment of school: A question of equity." *Journal of school leadership* 20, no. 5 (2010): 597-632.
- Whitaker, Todd. *What great principals do differently*. New York: Eye On Education Incorporated, 2009.
- Wright, Whitney. "The Disparities Between Urban and Suburban American Education Systems: A Comparative Analysis Using Social Closure Theory." 2012 NCUR (2013).

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