

Instruction of Security in Web Development

(Technical Paper)

Control of Education: Opposition to Critical Race Theory in the United States

(STS Paper)

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On my honor as a University Student, I have neither given nor received unauthorized aid on this assignment as defined by the Honor Guidelines for Thesis-Related Assignments

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Prospectus

General Research Problem

How can reexamination of the inherited assumptions that influence status quo education disclose promising new possibilities for improvement?

In classroom education, many of the subjects, the teaching techniques, and the instructional goals are inherited from well-established precedents of long before. Some components of such status quo education predominate because they work well, but others reflect assumptions of dubious validity, and which must therefore be reexamined. Reigniting our classrooms is essential to the evolving world around us. “The students of the future will need to learn how to discern, aggregate, and synthesize information in ways we cannot yet imagine” (Khalifa, n.d.). A shift from an “individual focus to an understanding that connections and relationships” are underway (Government of NorthWest Territories, n.d.). Inherited assumptions that are, upon examination, found to be unjustified must be replaced if classroom education is to serve its purposes well.

Instruction of Security in Web Development

How may the UVA CS Department synthesize CS 3710 and CS 4640 to produce an advantageous course that instructs best practices for developing secure web applications?

In the department of Computer Science, the technical advisor for my capstone project is Daniel Graham. I propose a synthesis of ideas from two completed CS courses, Intro to Cybersecurity (CS 3710) and PL for Web Applications (CS 4640). Web security is defined as a means of protecting a website or web application by detecting, preventing, and responding to cyber threats (GoodFirms, 2020). As the internet becomes more readily available, the aforementioned

cyber threats are compromising applications every day. Thus, systems of protection measures and protocols will further protect your website or web application from being hacked (GoodFirms, 2020).

The course objectives of CS 3710 are to understand fundamental cybersecurity principles as well as how to better safeguard one's personal computer. Using real-world applications and hands-on experience, students work on realistic security scenarios to understand threats and prevention. In CS 4640, students learn to develop dynamic web software with several programming languages including HTML, CSS, JavaScript, PHP, JSON, and more. The focus is on fundamental concepts of web development, which allows students to create reliable and usable web software.

The fusion of the two courses would teach students how they may build web applications while employing different techniques for maintaining best security practices. Learning the two dissimilar, but related, classes simultaneously would allow for students to leave the university with the knowledge of developing secure web applications. This would particularly benefit those who are interested in front-end web development. The potential knowledge gained would directly relate to future assigned tasks in jobs.

Control of Education: Opposition to Critical Race Theory in the United States

In the U.S., how do opponents of critical race theory in public school curriculums advance their agenda?

How do organizations and individuals use their platforms to promote their beliefs?

Recently in the media, integrating critical race theory (CRT) in public school curriculums has become a national debate. The framework emerged in 1995 when pedagogical theorists, Gloria

Ladson-Billings and William F. Tate, applied it in the field of education (Flory & Wylie, 2019, 1320). Opposition to the inclusion of CRT grew vastly as at least 165 local and national groups emerged trying to disrupt or block lessons on race and gender. Critics of CRT typically argue that public K-12 education should be free from indoctrination and politicized perspectives (Magee, 2021), though the curricula that they advocate are inevitably doctrinal and politicized.

The core idea of the CRT framework is “race is a social construct, and that racism is not merely the product of individual bias or prejudice, but also something embedded in legal systems and policies” (Sawchuk, 2021). Opposing critics stand for the ideology that has pervaded conventional education, especially in history classes. In a recent report, The Heritage Foundation stated that “in education, CRT is well-established, driving decision-making according to skin color—not individual value and talent” (Butcher & Gonzalez, 2020). Even though the framework has zero presence in compulsory education, the propagation of misinformation has led many critics to imagine different ideologies on what CRT entails. Opponents of CRT invoke values such as parental responsibility and authority, “color-blind” attitudes, patriotism, and anti-Marxism to promote their cause. By labeling itself a theory, CRT was made vulnerable to criticism since conventional schooling does not apply.

Researchers note that “adopting and adapting CRT as a framework for educational equity means that we will have to expose racism in education and propose radical solutions for addressing it” (Ladson-Billings, 1998, 19). A lot of conservatives detest this ideology since many inherently do not believe white privilege exists. In the U.S., about 80% of the teaching force identifying as white. (Flory & Wylie, 2019). As a result, there’s a lack of diversity in our schools and education system which only perpetuates the misinformation and lack of understanding of what CRT truly is. In research interviews with white instructors, Vaught and Castagno found that “denials of the

existence or function of White privilege – of systemic, racialized power not solely individually created and enacted – were common among many White teachers”. Derrick Bell found that to critics of CRT, CRT’s proponents fail “to persuasively support their claims of racial exclusion” (Bell, 1995, 908). He contends that to critics of CRT, the framework normalizes an unjustified conviction that systemic racism is pervasive in the U.S. (Butcher & Gonzalez, 2020).

Local and national groups that oppose CRT publicize their position through articles, through appeals to others to share their experiences, and by urging their supporters to take their objections to schools and school boards. No Left Turn in Education defines critical race theory as “a neo-Marxist-type ideology that replaces the Marxist idea of class conflict between capitalists and workers with the idea of racial conflict” (NLTE, 2021). By associating CRT with Marxist ideas, critics of CRT can take advantage of the widespread hostility to these ideas in an attempt to discredit CRT. Another anti-CRT organization, Fight for Schools, argues that CRT promotes the false idea that “American institutions, language, culture, meritocracy, and liberal system of government are systemically racist and must be fundamentally altered” (Fight for Schools, 2021).

Some anti-CRT groups characterize themselves as defenders of children. The group Parents Defunding Education alleges that “to all students,” CRT “spreads unhappiness, radicalism, and failure” (PDE, 2021). These organizations target parents through fear appeals. The Nevada Family Alliance argues that “proponents of this radical ideology will attempt to take over educational institutions” (NFA, n.d.). The criticism against CRT from groups like these demonstrates the systemic ideologies that have been formed and perpetuated through years of bias. Yet, the solutions for such debacles are hard to mitigate or control given the complexity of the situation education faces in this country.

References

- Bell, D. A. (1995). Who's Afraid of Critical Race Theory? *University of Illinois Law Review*, 1995(4). HeinOnline
- Butcher, J., & Gonzalez, M. (2020, December 7). Critical Race Theory, the New Intolerance, and Its Grip on America. The Heritage Foundation. <https://www.heritage.org/civil-rights/report/critical-race-theory-the-new-intolerance-and-its-grip-america>
- Fight for Schools. (2021). Why We Fight. Retrieved from Fight for Schools: <https://fightforschools.com/why-we-fight/>
- Flory, S. B., & Wylie, R. A. (2019). Cultural Competence of Urban Middle School Physical Education Teachers. *The Physical Educator*, 76.
- GoodFirms. (2020). What is Web Security? Good Firms. <https://www.goodfirms.co/glossary/web-security/>
- Government of Northwest Territories. (n.d.). *Reasons for Change | Education, Culture and Employment*. Education, Culture and Employment. <https://www.ece.gov.nt.ca/en/services/renouveau-en-education-aux-tno/reasons-change>
- Khalifa, M. (n.d.). *Education system needs to adapt to a fast-changing world*. The National. <https://www.thenationalnews.com/education-system-needs-to-adapt-to-a-fast-changing-world-1.473481>
- Ladson-Billings, G. (1998). Just what is critical race theory and what's it doing in a nice field like education? *International Journal of Qualitative Studies in Education*. <https://thrive.arizona.edu/sites/default/files/Just%20what%20is%20critical%20race%20theory%20and%20whats%20it%20doing%20in%20a%20nice%20field%20like%20education.pdf>
- Magee, N. (2021, June 15). At least 165 groups launched campaigns against critical race theory in schools: report. The grio. <https://thegrio.com/2021/06/15/165-groups-against-critical-race-theor/>
- NFA. (n.d.). Nevada Family Alliance. Toolkit: Combatting critical race theory in your community. <https://www.reclaimingourschools.com/post/crt-toolkit>
- NLTE. (2021). No Left Turn in Education. What is Critical Race Theory (CRT). What-is-CRT. <https://www.noleftturn.us/wp-content/uploads/2021/09/What-is-CRT.pdf>
- PDE. (2021). Parents Defunding Education. About Us - Who We Are. About - Parents Defunding Education. <https://defendinged.org/about/>

Sawchuk, S. (2021, May 18). *What Is Critical Race Theory, and Why Is It Under Attack?* Education Week. <https://www.edweek.org/leadership/what-is-critical-race-theory-and-why-is-it-under-attack/2021/05>

Vaught, S.; Castagno, A.E. (2008). "I don't think I'm a racist": Critical Race Theory, teacher attitudes, and structural racism. *Race, Ethnicity, and Education*, 11. [https://www-tandfonline-com.proxy01.its.virginia.edu/doi/full/10.1080/13613320802110](https://www.tandfonline-com.proxy01.its.virginia.edu/doi/full/10.1080/13613320802110)