

3-1-2024

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Recommended Citation

Gillian, I, (2024). An argument for interdisciplinary learning. South Carolina Association for Middle Level Education Journal, 3, 137-139.

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An Argument for Interdisciplinary Learning in Middle School

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Abstract: Interdisciplinary education is a pedagogical approach that is beneficial for adolescent learners. Using this approach, students can integrate knowledge from one subject into another and form a holistic understanding of the real world we live in.

Keywords: adolescent brain, interdisciplinary, interlocking learning, humanities, liberal arts

Introduction

The idea of interdisciplinary education is not a new concept, but it has become increasingly clear that this approach best meets the needs of young adolescents who are experiencing rapid growth and change in their cognitive abilities. They are ready to wrestle with abstract concepts and make connections across content areas. These “adolescents are diverse in many ways” and this pedagogy is one way to help meet their individual needs and to assist their learning (Dore & McMurtrie, 2020, p. 1).

What is Interdisciplinary Education?

The world is more than just one discipline. Ideas are connected and integrated into one another in the real world, inspiring some teachers to use interdisciplinary pedagogy. Even and Race (2021) describe how they decided to try out an interdisciplinary unit to combine science and history. They provide the student perspective too, saying how many students said that it “made it clearer how their classes connected and made it easier to see how subjects in school relate to the real world” (Even & Race, 2021). Three different tips are provided: 1) Look for moments of curricular overlap, 2) Choose a theme and a shared summative assessment, and 3) Build knowledge and inquiry for each discipline (Even & Race, 2021). The tips provided by Even and Race are useful to understand what interdisciplinary education is and help educators facilitate the process in innovative ways.

Interlocking Learning

Interdisciplinary learning functions much the same as interlinking learning in education, just under a different name. Interlinking learning focuses on “connectivity, context, and applicability,” which is how interdisciplinary education functions as well (Hendricks, 2023). Those three focuses are helpful in breaking down information. Adolescents are always asking when they may use information in the real world. It is

important to provide the context for the adolescents as they can build connections to their anticipated path in life. Connections to the world will help create adolescents who dive further into learning and assist them in becoming knowledgeable adults. Hendricks also notes that the learning style can be traced to the philosophy of John Dewey as he encouraged more connected learning to build a whole adolescent. This connected learning helps students of all kinds to build on a subject they may be more comfortable in. Creating a classroom focused on interdisciplinary learning “fosters vibrant classroom environments where students can make connections between different subjects” (Hendricks, 2023). Interdisciplinary education is there to build a better student, one with knowledge in multiple areas to boost their skill set.

Assisting them in creating connections with their learning will allow them to retain their information past a test as they will use their information in other subjects. Beane (1995) notes that integrating the curriculum in an interdisciplinary way does not cause shifting lesson plans across the subjects but helps students access the information in innovative ways (p. 616). The pedagogy is not difficult to implement for adolescents and integration can help them, too. Adolescents build their own learning experiences and focus on creating a connection to their current knowledge.

The Adolescent Brain

Interdisciplinary education is especially important at the middle level. During the initial period of adolescence, the brain grows to 90-95% of the maximum size it will reach, during which unused connections transform into grey matter (“Brain development in pre-teens and teenagers,” 2021). When the brain forms a variety of connections that are used there becomes a myelination of the neural links, strengthening them and allowing an easier recall of those connections. Another key tie-in with adolescence is that it is the period when adolescents are finding themselves, challenging previous ideas, and experiencing a shift in executive function (Robinson, 2017, p. 30). Adolescents are at an age where there is going to be a shift in identity, and they will have challenges associated with their development. This shift is about the idea of mental elasticity for adolescents as they stretch their current knowledge and build more of their identity. Providing information through multiple contexts that the adolescent can access within their mind builds the adolescent to bring their individual experiences to the table throughout their future.

Humanities

What does interdisciplinary learning look like in the classroom? One key representation in the modern classroom is a stronger push for including humanities for students as it allows them to explore new ideas in innovative ways. Literature courses can provide ways for adolescents to do some deeper thinking when analyzing a text, while something

like a history course can help provide context for someone to understand how society has gotten to where we are today. It is also found to help adolescents get out of their comfort zone and experience a new state of being in areas such as music, art, or theatre. Humanities allow adolescents of diverse backgrounds to come together and build their identity in a more holistic sense. Adolescents can blend the lines of disciplines within humanities to find their connections to life to help their development mentally. Often, humanities work to show adolescents the real world in a new way, but not everyone is in support of humanities.

One argument against focusing on the humanities is that adolescents will spend less time on their topic of interest and are forced to dive into other areas. Adolescents may lose interest due to not finding a passion in a humanity or feel that it is a waste of money depending on the age of the adolescent. There are valid reasons to be against a broader span of learning but there are ways to fix that process to create more of an access for that information that can be reinforced in different areas. Skeptics of interdisciplinary education vie for the topic to be seen as negative due to the lack of concentration one may have on a specific subject due to learning about general education courses on top of their core classes. There is a push for this compartmentalization to help adolescents specialize in an area in which they excel and push down the number of courses for students, so they are not pushed into classes they have no interest in. This idea of compartmentalization can result in an adolescent who is knowledgeable in one area but lacking in many. However, compartmentalization is not a concept beneficial for adolescents. The concept acts against the adolescent mind and how they process their information as they are learning to 'connect the dots' within education regarding how subjects interact.

Finding Common Ground

Szostak (2017) brings to light that there is a widespread misunderstanding of what the nature of interdisciplinary education is. Some identify the pedagogy as being hostile towards the disciplines in that it will create a lack of focus on any singular discipline, or that interdisciplinary scholars view themselves as superior, which is a minority of those invested in the subject (Szostak, 2017). There is also the fact that some adolescents may learn better through a disciplinary focus because it may fit their learning style in a better way. The reason to go against that disciplinary focus is that learning needs to be challenging for adolescents as that is what helps make a well-developed adolescent (Bishop & Harrison, 2021, p. 10). The critics of interdisciplinary education offer valid concerns when dealing with the topic and they mention more points to support their claims.

Focusing on one discipline is good as it can help build strength in certain areas. A disciplinary focus is also important because it can help build foundational skills in areas in which one may need improvement. There is also a need for an understanding of the individual disciplines before there is a shift towards an interdisciplinary learning process. Disciplines also do need researchers who form innovative ideas within the field and

make new discoveries, however, it is not an end-all-be-all. There is importance in listening to the concerns brought by the critics to work in improving interdisciplinary pedagogy because doing so will help in producing a common ground. The ideas proposed by the critics should not be dismissed. Education does need some clear separation of disciplines and not every content will be usable in interdisciplinary teaching, creating a need at times to separate the content. The opposite is also true, there will be ideas that have value in being taught in an interdisciplinary way because the topic can cover a wider amount of content. The critics bring in a focus on the different disciplines, showing the power that having a clear direction in just one path can create because it builds a more focused individual. There is a need for disciplinary learners, but also a growing need for those pursuing an interdisciplinary understanding. Because of the age of information that we are in now, there is a need to understand a little of everything to see how actions and knowledge can be put into context,

Liberal Arts Education

Despite these arguments, it is important to acknowledge that the world is progressing in ways that require young people to stretch themselves across multiple areas and demonstrate proficiency and adaptability through the skills they acquire. For example, English majors often find their degrees being spread into multiple fields of writing: creative, workplace, technical, and more. Other majors have concentrations within them where they home in further on an idea that first needs a basic understanding that each area can pull from, creating that base as an interdisciplinary start. Having a background in areas such as a humanity can provide some deeper thinking skills necessary for something like a law degree, or for building study methods and foundational skills to transfer to a law degree. This idea has brought about a focus on increasing liberal arts education, a topic related in some ways, because it helps create a more holistic-minded adolescent who brings in knowledge from other areas into their learning. Liberal arts education provides a dip into multiple subjects to test the waters of interest, while interdisciplinary learning is diving into several subjects that an individual finds interest in.

Collaborating with Colleagues

One viable way to meet in the middle is to take the process of integrating interdisciplinary education slowly, not jumping straight into going through an interdisciplinary unit while unprepared. Work together with co-teachers if teaching in the classroom or with fellow researchers to get a wider view of a subject of interest. Compare standards to look for concepts that overlap. For example, Social Studies classes studying the Great Charleston Earthquake of 1886 could investigate the cause of earthquakes in Science class, while reading a novel or diary entries about the experience in English class.

Including information from multiple angles helps adolescents to decompartmentalize that information. That means of learning is beneficial for the adolescent mind as they can reach out to other areas and see the holistic nature of learning. This can be difficult at times in public education, but it is viable to introduce. The idea can be done by talking with other teachers about content and homing in on examples that relate to other

content. Interdisciplinary education benefits from the advancements made within the individual disciplines and that needs to be emphasized to those that critique the topic of interdisciplinary education. The world relies on disciplines and needs their success to bring a focus into the interdisciplinary world. Interdisciplinarity builds the bigger picture for adolescents that they can bring into their learning if they pursue a specific discipline. Education needs both those with a clear aim of pursuing a disciplinary path to focus on an individual goal and those open to expanding the horizons with a broader look at information. Both methods help build a better adolescent in different ways, requiring a need for both in the world.

Conclusion

Education is a growing field of knowledge, and the way content is taught is constantly changing. Teachers believe in different educational philosophers, different literary arguments, and more. Education is not stable, causing a need for interdisciplinary education to arise to help provide adolescents access to knowledge in multiple formats. This will provide adolescents with an opportunity for them to learn content in ways that suit them, be it through different learning styles, modalities, content preferences, or anything else. Education matters most to the student as it is meant for their benefit. Preparing students with interdisciplinary methods can increase their understanding of foundational knowledge. By using that preparation, students will be able to connect their information holistically throughout the disciplines to tie in their existing throughout the world.

AMLE affirms that education for young adolescents must be:

Responsive

Using the distinctive nature and identities of young adolescents as the foundation upon which all decisions about school are made.

Challenging

Cultivating high expectations and advancing learning for every member of the school community.

Empowering

Facilitating environments in which students take responsibility for their own learning and contribute positively to the world around them.

Equitable

Providing socially just learning opportunities and environments for every student.

Engaging

Fostering a learning atmosphere that is relevant, participatory, and motivating for all learners.

(Bishop and Harrison, 2021, p. 10)

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About the Author

Isaiah Gillian is an undergraduate student at the University of South Carolina - Aiken where he studies secondary and middle-level English education. He is a member of several organizations to build his repertoire, including the SC Teaching Fellows. Isaiah plans to work further on research to build his skill set and best help today's adolescents in new and innovative ways.



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Recommended Citation (APA 7th ed.)

Gillian, I. (2024). An argument for interdisciplinary learning. *South Carolina Association for Middle Level Education Journal*, 3, 137-139.

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Published online: March 2024

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