

The Significance of Youth Voices in Shaping and Implementing Artificial Intelligence for Learning and Education

Latifa ZIANE BOUZIANE¹ 

¹ Hassiba Benbouali University, Chlef, Algeria

Received: 28 / 07 / 2024

Accepted: 07 / 11 / 2024

Published: 15 / 01 / 2025

Abstract

There is tremendous potential for artificial intelligence to transform learning and education. But, for the technology to truly flourish, it requires insight from its most important stakeholders, young learners. The importance of youth voices in AI for education posits that the youth should not merely be on the receiving end of AI-informed educational experiences but proactive agents with important contributions. Educators who intersect with serving the needs of young students, outstanding fluency in technological tools among their peers, and idea-generative specialists can help direct how AI offerings should be created to make more engaging ones that work efficiently while accommodating them. In this article, the investigation describes how workshops, surveys, and co-creation initiatives are necessary ways to promote youth participation. The article, therefore, advocates for youth-friendly interventions (workshops, surveys) and co-creation processes. They round out by suggesting that the representation of youth voices in the design and practice of AI for education will not only be impactful but also expected. The future depends on the potential of young minds, so technological advancements must serve as enablers rather than obstacles to progress. The insights presented here highlight the importance of actively engaging young people in AI development and outline some of the obstacles they encounter, along with strategies for empowering them to contribute to the future through intelligent educational systems.

Keywords: Artificial intelligence, contribution, education, learning, students, technology, youth

ملخص:

هناك إمكانات هائلة للذكاء الاصطناعي لتغيير التعلم والتعليم. ولكن من أجل ازدهار التكنولوجيا حقاً، فإنها تتطلب رؤى من أصحاب المصلحة الأكثر أهمية ألا وهم المتعلمين الشباب. وتؤكد أهمية أصوات الشباب في الذكاء الاصطناعي للتعليم على أنه لا ينبغي للشباب أن يكونوا مجرد متلقين للتجارب التعليمية المستندة إلى الذكاء الاصطناعي، بل يجب أن يكونوا وكلاء استباقيين يقدمون مساهمات مهمة. يمكن للمعلمين الذين يتقاطعون مع خدمة احتياجات الطلاب الشباب، والطلاقة المتميزة في الأدوات التكنولوجية بين أقرانهم، والمتخصصين في توليد الأفكار، أن يساعدوا في توجيه كيفية إنشاء عروض الذكاء الاصطناعي لجعلها أكثر جاذبية وتعمل بكفاءة مع استيعابهم أيضاً. تناقش المقالة الحاجة إلى سبل مثل ورش العمل والاستطلاعات ومبادرات الإبداع المشترك لتمكين مشاركة الشباب. وتحقيقاً لهذه الغاية، تؤكد المقالة على الحاجة إلى ميزات يمكن الوصول إليها من قبل الشباب (ورش العمل والاستطلاعات) وعمليات الإبداع المشترك. وتختتم بالتأكيد على أن دمج وجهات نظر الشباب في تصميم وتنفيذ الذكاء الاصطناعي للتعليم لن يؤدي إلى فوائد كبيرة فحسب، بل سيصبح أيضاً ضرورة مطلقة. إذا أردنا أن تساهم التكنولوجيا في تمكين التنمية وليس عرقلتها، فإن وضع تجربة الطلاب في صميم هذه العملية يبدأ من العقول الشابة.

الكلمات المفتاحية: الذكاء الاصطناعي، المساهمة، التعليم، التكنولوجيا، التعلم، الطلاب الشباب.

Email: zianebouzianelatifa@gmail.com

Introduction

Artificial Intelligence (AI) can contribute to our everyday tasks, and there is already a robust conversation worldwide where parents and their teenagers are deeply intrigued by AI. Nevertheless, AI directors and those who supervise the implementation of AI in learning and education believe that the fast-moving technical establishment operates with much quicker knowledge than the active educational sectors. It is essential to know the potential routes for funding AI in teaching and education in motions for using the viewpoints of the learners. For any AI formation of learning and education that develops a technological basis and comprises relationships and tasks, schooling at an effective pace and with desirable recurrences is essential.

However, before this, students need to be supported to assess the opportunity for AI. They need to be encouraged to present their thoughts and to advise so that AI, in managing its newly shown means with learners, the organization can generate an educational setup that brings fairness and pluralism. This is particularly true in an area that can have momentous power benefits and in teaching and education, where sustainable objectives are critical to constructing reputable communities.

AI is a powerful and emerging assortment of technologies with the capability to drive and substantially transform the current world. AI is developing at an astonishing pace, altering almost every area of our lives and every aspect of human society. With the incorporation of technical features, it also has the stunning possibility to transform the future of learning. Considerably, AI looks set to pose pivotal questions to people by promoting their activities and hobbies, influencing their cultures and the method by which we get trained. It will have an impact on what we need to learn, or when and how we learn it, and that is influencing all levels of our educational systems, taking study outside the conventional structures. Over the next years, many trends will emerge to mobilize AI in learning and education to be a firm fact that has an impact on countries and the lives of people. Tutors are currently evaluating how.

The research problem that this study tends to explore is the under-representation of youth, especially from diverse backgrounds, in AI and their exclusion in designing AI technologies that not only affect or shape education but also communities. This gap leaves room for potential biases and narrows the range of perspectives that inform various educational AI applications. The core of this study is to understand and support student agencies in designing, developing, and implementing AI technologies for educational use from a diversity of perspectives. The study is important as it may give young people the right to succeed in recognizing that they have a voice and are crucial AI stakeholders. Tackle the current biases in AI systems by including a broad set of youth views. Offerings to Improve Educational Outcomes with AI Tools that Appeal and Resonate More Effectively for Young Student Audiences Develop new talents, particularly those emerging from under-represented communities in AI, fostering the workforce diversity imperative of AI.

This study aims to gauge how much youth are involved in AI development and education. It also tries to spot obstacles that prevent young people from different backgrounds from participating in AI-related fields. Furthermore, it looks into effective strategies to get youth involved in creating and rolling out AI technology in education. Finally, to evaluate how

youth involvement affects the creation of fair and useful AI tools for learning and to find answers to the set objectives, the following questions have been posed:

1. What is the current extent of youth involvement in AI development and education?
2. What obstacles do young people encounter when interacting with AI technologies?
3. How can institutions and organizations successfully encourage youth engagement in the implementation of AI in education?
4. What advantages come from integrating youth viewpoints into the creation of AI tools for education?

Literature Review

Definition and Types of Artificial Intelligence

By definition, Artificial Intelligence (AI) is a technology that allows machines to learn from experience and perform human-like tasks. AI encompasses everything from simple "if-then" rules and decision trees to complex systems that utilize pattern matching - like facial recognition, speech recognition, and object identification -- through deep learning. This also includes skills in natural language processing and text analysis for word and context meaning. (Brynjolfsson, 2023) Examples exist today in the public sector, as a variety of AI applications are identifying matters such as healthcare and education problems or judicial decisions and government services delivery to citizens on the spectrum from strong-weak-AI implementations. In the United States, for instance, local and state governments have applied AI tech to analyze school data sets to predict which students might be likely to drop out of high school or where exactly "hotspots" may exist concerning human trafficking (Ahn & Chen, 2022).

AI is changing the world around us by innovating how we approach education, healthcare, and agriculture besides finance or transportation. Teenagers from across the world have taken matters into their own hands to prototype AI-driven solutions that impact their communities and society at large. One of those amazing projects is the smart device Aztlan, created by Angie Kim, a Mexican-born girl of Korean origin. Hospitals and residential homes for the elderly prevent people from falling using this device. Our system becomes intelligent in identifying patterns of interactions likely to lead to falls based on the recorded sequences during a sustained one-minute time window for spatial and temporal cognitive-behavioral marker recognition with pattern-based as well as density-based approaches. Within these parameters, Aztlan also alerts caregivers when a potential faller has moved on. This is liberating - Angie Kim (and many others) show us that plenty can be done today by young people to improve AI development, furnishing citizens with new tools (Minich, 2023)

Understanding AI in Learning and Education

AI applications in learning and education can be dissimilar in their practices, usages, and impacts. When examining AI and its impact on learning, the adjustment of pedagogical objectives and learning approaches of various AI applications should be reviewed. It has been examined that with the existence of AI tools and applications, new opportunities in the area of learning can be approached (Chen et al., 2020). Previous research often stresses the influence of AI on the educational or institutional setting, especially on efficiency issues, such as administrative aspects or the combined teaching and learning process. The user group of AI, in this sense, takes into account students, teachers, policymakers, and institutional administrators (Zhai et al., 2021). Therefore, considering the user groups in terms of digital curriculum and AI

teachers as an influential part, we consider the users as two main actors who interact with the AI applications to shape the educational process (Holmes & Tuomi, 2022).

Education users are not a homogenous group. They are a diverse group that can both have different and opposite interests depending on the perspective of users. Proposed a model examining AI as a player in learning and an influencer of learning. Furthermore, AI also takes the position of the mediator of the personalized learning model and the change agent model in learning. In terms of learning and education impacts, those are mainly addressed to research questions in two streams, which are theoretical implications and practical implications. Although researchers have examined the core features of AI, like intelligence, we are still lacking a concrete model that helps in the conceptual design for practical AI applications in the educational process.

Yim and Su (2024) contributed an overview of K–12 AI literacy education, putting forward the development of critical thinking and ethical considerations in the development of AI technologies. They focus on age-appropriate tools, such as Google's Teachable Machine and Scratch, that foster computational thinking and problem-solving skills. These tools enhance the understanding of AI students and make the learning process interactive and full of fun. Successful pedagogical methods that appear to coincide with the principles of constructivism are project-based, human-computer collaborative, and game-based learning. Cognitive, affective, and behavioral learning outcomes about AI literacy education would hence be observed, which implies that students not only gain knowledge but also soft skills and course satisfaction. The authors zero in on the fact that it is relevant to assess students' outcomes of learning and how they further apply their knowledge to other contexts. As AI continues to develop, so does the importance of effective educational practice.

The integration of AI in education has emerged as a transformative force, reshaping traditional pedagogical paradigms and enhancing personalized learning experiences. Ayeni et al. (2024) provide a comprehensive exploration of this dynamic intersection, highlighting the multifaceted role of AI in addressing individualized educational needs and optimizing learning outcomes. The authors argue that AI-driven personalized learning tailors educational experiences to the unique preferences and paces of each student, thereby fostering a more inclusive and effective learning environment (Ayeni et al., 2024).

AI in education has come to be a disruptor and has mainly opened up traditional pedagogical models to reform, allowing for opportunities for personalized learning. Ayeni et al. offer a comprehensive review of this turn, from how automated intelligence features help in customizing educational experiences to the improvement, up to 2024, in learning outcomes. They posit that since AI personalized learning individualizes educational experiences based on a learner's particular preferences and pace—not on a cohort—it is inclusive and leads to effectiveness in an improved way than regular (Ayeni et al., 2024) The authors spread it to a wider application of AI in educational technology, including platforms and interactive tools outside the classroom. The section emphasized the importance of AI in curriculum, content design, and assessment techniques that provide a platform to teach effective learning environments.

Additionally, the review speaks to AI automating administrative tasks, freeing educators up for more personalized instruction (Ayeni et al., 2024). Nonetheless, the successful implementation of AI in education does not come without some challenges. Ayeni et al. (2024) discussed ethics, privacy issues, algorithm biases, and the digital divide. Include responsible AI

implementation and the development of guidelines for ethical AI application to provide equitable access to educational resources enhanced with AIs. The authors posit the need for educators, policymakers, and technologists to work together in tackling these challenges as they aim to foster an inclusive learning environment.

Youth Engagement in Artificial Intelligence

Today's era of AI is not only steeped in start-up funding and exciting applications but also a growing network of youth who are interested in ethical dimensions. It is more important than ever, therefore, that young people understand the ethical, societal, and privacy implications of these new technologies as AI systems increasingly control aspects of their lives (Hugerty & Rubinov, 2019).

Current studies have shown that more AI comprehension is needed by young generations of society, as they will be those who use and form these new generation-provided tools (Casal-Otero, 2023). Importantly, AI-powered educational technologies like intelligent tutoring systems and mental health interventions can now revolutionize learning as well as well-being. Yet it is critical to remember that the very products of this technology may inadvertently exclude underrepresented youth from these futures, necessitating AI deployment in more inclusive and equitable ways. Youths and researchers have been demanding cohort work to co-construct a research program directed at nurturing the power of youths within an era called the "AI-dependent age." The idea of this initiative is to amplify the voices of youth and involve them in research so that we do not only look at building a future where AI will be everywhere but also serve those who are most affected by it (McDonald et al., 2023).

As AI is more and more woven into the everyday tapestry of youth, today's young people must develop skill sets to take full advantage of these technologies for productive - not just potentially harmful - benefits.

Current Applications in the Education Sector

Several countries internationally have adopted measures to leverage big data from education and teaching to develop AI applications in education. For example, *Smart Campus* systems are popular in Korea and mainland China, in which AI tools work to personalize learning, teaching, and campus life, providing data analysis and early warning of students' academic risks. In the United Kingdom (UK), the Education Endowment Foundation (EEF) uses AI to understand studies' findings faster and provide guidance of the highest methodological quality to practitioners, enforcing a research-practice link in evidence-based education (Li & Wong, 2021).

AI's current applications in the education sector also include intelligent teaching, AI-driven decision support for policy-making, and AI education. The most common type of model applications worldwide take advantage of language and knowledge processing technologies and natural language-based processing; they personalize e-learning, provide data mining with meaning, and support intelligent steering in general.

Meanwhile, existing applications also draw on machine learning technology, filling the technology gap that teachers face in adjusting and maintaining students' socio-emotional learning performance. They also use computer vision and machine learning technologies for real-time student engagement monitoring. General AI models are customized with Quasi-Physical and 3D interaction abilities by the community to visualize popular theories such as quantum mechanics. AI's applications in education also provide global opportunities, such as

mobile-based AR driving equal access to global learning opportunities, bringing about, with a donation, international aid access to global human rights education (Bhutoria, 2022).

The Role of Youth in AI Development

The development of AI has almost exclusively taken place independently, without adequate assistance and input from a variety of valuable perspectives and voices. This reality creates one-sided computer programmers who cannot effectively leverage diversity, overcome stereotypes, build inclusive systems for all users, and ensure fairness and just AI outputs. To identify the gender and race prejudices that inform the AI dataset and challenge the systems that inform the AI decisions, diverse voices need to exist on the teams designing AI, and this is not the case. Furthermore, to identify resource inequalities and list missed opportunities, socio-economically diverse input of big data is a mandatory condition. To realize such a variety of input, the creation of a variety of educational and work opportunities is a prerequisite. These inequalities might be supported by giving more access to AI education and learning opportunities to youth.

At this moment, only 70% of Secondary CE Schools in the UK teach Computer Science or Information Technology, a young discipline in itself. Youths who have received a suboptimal AI education may also feel embarrassed about what is acknowledged and hence be discouraged from taking more advanced courses or pursuing AI-related careers. Stereotypes and preconceived assumptions may also dissuade young people from specific backgrounds from participating in such a field. Thirteen percent of the UK's AI staff is from a BME background, and 19% are female, which is a lower rate than Turkey's, a country with a higher literate female population. Concretely, in terms of age, socioeconomic class, sex, and origins, they are not differing and not challenged to bring their personal experiences to a critical issue. As a result, they may also unintentionally create biased algorithms and searches (Hernandez & Roberts, 2018).

Benefits of Youth Involvement

The benefits of youth involvement in AI extend far beyond the development of the AI technologies themselves. Certainly, youth play critical roles in advancing AI in terms of developing young talent and bringing diverse perspectives to AI research. However, the benefits differ depending upon what exactly one means when referring to "youth." Children, as future adult consumers, have differing stakes in AI than today's society members, and evidence suggests that these underrepresented stakeholders can have significant impacts on AI trajectories.

Broadening the Source of Future Talent at the simplest level, youth will be the future scientists, engineers, regulators, investors, corporate executives, and military generals, and it would be wise to invest in developing skills and interest in the state-of-the-art in AI research and development. A close look at which young people are currently engaging in AI and where suggests that the current investment from society is lacking, particularly from girls and members of underrepresented racial and ethnic groups.

According to Luckin et al. (2016), earlier young teens become accustomed to AI concepts, their understanding of technology can develop further, and it prepares them for careers in a job market that is ever-evolving. Improving young people's digital literacy is a key benefit of their participation in AI. Young people learn to interact with AI technologies and, in

so doing, also develop their digital literacy, a key requirement for navigating an ever more digitally connected world (Bennett et al. 2019). This Common Purpose helped students to not just use AI tools effectively but also understand the implications of AI in society. Furthermore, engaging youth in AI projects promotes innovation and creativity. Often, youth can identify fresh and novel ideas that can lead to innovative solutions to difficulties (Bennett et al., 2019). For example, youth-led AI initiatives can address specific social issues, such as climate change or healthcare, and further enhance technology to address those issues directly (Bennett et al., 2019).

Moreover, having young people participate in AI is crucial for creating technology that is open and diverse. When we include a variety of young people in AI projects, we get a broad mix of ideas and viewpoints, which is very important for making AI that is fair and balanced (Li et al., 2024). This participation can also reduce unfairness in AI programs and lead to more fair results when we use technology.

In addition, young people participating in AI projects can provide an opportunity for them to learn and enhance their career advancement. With the growing demand for AI skills among multiple industries already present, young people who gain experience with AI are better poised to enter the workforce (Luckin et al., 2016). Early involvement in AI projects may also encourage youth to pursue STEM careers, contributing to the future skilled workforce. As detailed, youth involvement in AI provides many benefits, including improved digital literacy, innovation, inclusion, and career enhancement. As society continues to wrestle with the dilemmas of AI, supporting youth involvement in AI is important for creating a more equitable, knowledgeable, and technologically competent future.

Challenges and Opportunities

Though it may open new opportunities, the engagement of youth in AI development comes with many challenges as well. One of the crucial issues slowing down great AI solutions to land is a restricted supply of high-quality training data and resources. Young developers may also have trouble securing funding, and with a legal landscape that is still hazy on the subject of autonomous weapons, it can be tough to get your innovation off the ground.

A further challenge faced by the AI industry is training and mentoring upcoming talents in choosing field-specific programs to be ready when a machine learning engineer job becomes available. For Octo, that means being well-versed in interactive data visualization and narrative storytelling through the medium of open-source technology. Additionally, implications related to the potential biases and ethics of AI systems developed by youth who may have less experience (and domain knowledge) than older researchers or practitioners are a concern. It is really important that these concerns are addressed and that the development of AI occurs with sense.

One major challenge is not having enough resources and chances to learn. Many young people, especially those from less fortunate backgrounds, might not have the important tools, training, or guidance to join in AI projects (Li et al., 2024). This can stop them from learning the skills they need and contributing to AI progress. Another challenge is the complexity of AI technology. The technical side of AI can be challenging for young people, especially those who are new in the field. Luckin et al. (2016) argued that understanding AI concepts and programming can be quite difficult, which might lead to the rejection of AI projects. Therefore, without the right support and guidance, many people might feel overwhelmed and lose interest.

Moreover, there is a huge challenge of ethical problems in AI development due to young involvement. Young people, due to a lack of experience and understanding of the consequences, might not be in a position to manage issues regarding prejudice, privacy, and responsibility in AI technology (Benett et al., 2019). Such misunderstandings might lead to the creation of AI systems that do not consider societal implications and, hence, enhance already existing imbalances. Furthermore, there is the possibility of tokenism when young people are engaged in AI initiatives. This means that organizations involve youth in projects to create a good appearance rather than appreciate the contribution and view of young people (Li et al., 2024). Doing so may lead to disillusionment among the youth since they feel that their contributions are not being taken seriously or, at times, are only assigned to non-essential roles during the development process. Youth engagement in AI development is crucial for fostering innovation; it is accompanied by several challenges, including access to resources, the complexity of technology, ethical considerations, and the fast-paced nature of the field. Addressing these challenges is essential to empower young individuals and ensure their effective participation in AI development. But these challenges bring with them opportunities for AI-skilled youth! A youthful perspective can bring newness, creativity, and a deep understanding of emerging technologies and converging social trends. When new ideas are needed, encouraging our youth to participate is an obvious solution - we all benefit from a wider range of participants in AI.

Case Studies and Best Practices

Examples of Successful Youth-Led AI Projects

Powerful youth-generated AI projects from around the world offer endless examples of what it looks like to connect with younger audiences. These are examples of the creative abilities, problem-solving skills, and technical acumen kids can bring to this important effort.

A perfect example of this is a team of student high school students in the United Kingdom developing an AI app on their own. Effectively, the software functions like a snazzy AI operator to assist and guide visually impaired users in real-time using man-learning algorithms for object recognition. Beyond the technical expertise it displays, this project demonstrates engagement among these new developers with an urgent social issue of AI (Abraham et al., 2020). That might be the case study, and there was another one in India where a group of university students built an AI to help farmers increase their crop yields. The system is capable of analyzing data on the soil condition, weather pattern, and historical crop performance to make individualized recommendations based on past practices for seasons or years ahead, thereby equipping farmers with insights needed to optimize production. The project demonstrated the ability of young people to use AI and make a positive impact on agriculture (Linaza et al., 2021).

In performance on case studies like the ones above, young contributors to AI development play an invaluable part. We should nurture and support such initiatives as much as possible to remove the limits of teenage talents, empowering them with AI to take on society's challenges.

It is, therefore, of interest to include students in discussions about using AI in education, aiming to make them feel in control and to avoid the fact that the education system does not meet their needs and expectations. This section describes the practical steps for including young people's opinions in the debate about the use of AI in education. It has been shown that

if students themselves are involved in the creation and usage of AI educational tools, they will have more suitable learning experiences. For example, Yim and Su (2024) explain how the creation of educational materials in cooperation with future users adds hidden value and, subsequently, means the creation of materials based on students' experiences.

This experience allows the students to shape the degree of engagement as well as the potential learning experience, especially when working with their preferences and concerns. The outcome is educational resources that fit their needs, ultimately creating a more universal educational setting.

Further, the voices of youth could be valuable in adding information about the usability and efficacy of AI tools. Yim and Su (2024) allude to one benefit of the students' experience with AI learning tools: informing our educators understanding about how these technologies are doing well and where they are not. This feedback loop is an important part of continuous improvement; how to improve these AI resources through feedback so that they can better serve the needs of various learners is potentially worth considering. For example, concerns about accessibility, level of engagement, or other ethical considerations could be shared by students, encouraging educators to consider adjustments.

In addition to providing feedback, students can also serve as advocates for ethical AI use in education. Given the ethical questions about data privacy, bias, and transparency that AI technologies raise, it is crucial to include young learners in the conversation.

Involving students in discussions of the ethical implications of AI technologies contributes to the development of critical thinking and responsible citizenship (Yim & Su, 2024). Creating an environment where students are ready to act as informed users and creators of AI technologies implies exposure to challenges and issues on the surface and fosters thinking around usage, creativity, and opportunities in education. It can also boost enthusiasm and involvement when AI education is linked to young voices. If they have the opportunity to express their opinions, they will be more interested in their education, and if they believe they have a say in how their education should be structured, Yim and Su (2024) discover that student interest is piqued while attending AI literacy instruction using a project-based and collaborative learning strategy. The investigation of youth voices in AI applications for education is vital and critical. This involves keeping students aware of the tool, including them in feedback production, and ethically beginning conversations around AI educational technologies that support or add authenticity to the objective of employing a tool.

Recommendations and Future Directions

The innovation landscape in the development of AI is still one that evolves, so you need to not just harness their youth for advancement but also provide them room to grow within this industry. Takeaways and key recommendations for better engaging young people in this work.

To enable youth participation in the creation of AI, policymakers should start by creating conducive contexts and relevant support services. It could also be about designing scholarships, internships, and acceleration programs that will enable to hand-pick emerging talent to provide them with the support they need for their ideas to fruition. Along with this, schools and universities should also update their current curriculum to focus on training students in the skills that are required by AI- simply having a relevant requirement will not be able to help much in the artificial data coordination that is available. This should include the incorporation of high-quality AI-specific course exposure alongside a measure of learning

across disciplinary lines that combines technical skill development with normative and social impacts.

Additionally, industry leaders and more seasoned AI practitioners should be proactive in seeking opportunities to collaborate with the next generation of developers, researchers, and entrepreneurs. It will define the opportunities that can lead to emerging AI initiatives and make sure their voice - powered by too much know-how, guidance from others through mentorship programs, as well as unfiltered ambition is so powerful a new generation of problem solvers. By following the ideas above and by painting a vision that promotes AI-powered innovation among young people, we can create an era where technical progress will be put to use for social good.

Policy Implications

Policymakers play a crucial role in fostering an environment that supports and empowers youth participation in AI development. Establishing supportive policy frameworks is essential to unlocking the full potential of young innovators in this field.

Some key policy implications to consider include:

- Creating financial mechanisms – Scope of funding programs and grant schemes for youth-led AI projects or startups Mechanisms could include creating dedicated budgets, extending tax incentives, or building specific funding partnerships with education and the private sector.
- Putting in place policies at the national level that require young people to be part of AI-related decision-making processes, from design and development through deployment. This allows the voice and vision of youth to be brought into the fold, lest we continue as adults shaping an increasingly high-tech landscape without input from those who will inherit it.
- Regional education policy establishment, incorporating AI-enriched curricula + experiential learning at the secondary and tertiary levels. We can prepare the next generation of AI-empowered leaders and problem solvers by making sure they are educated in technical basics as well as ethical discussions.
- Policies that promote youth interaction with academia and industry for knowledge-sharing. It could mean providing access to internships, mentorship programs, and cross-collaborative research projects that connect the dots between academic setups and AI in tangible terms.

By addressing these policy-level considerations, policymakers can create an enabling environment that empowers youth to actively contribute to the development and responsible deployment of AI technologies, ultimately driving innovation and societal progress.

Strategies for Increasing Youth Participation

To effectively harness the potential of young people in AI development, it is crucial to implement targeted strategies to increase their participation and engagement in this field. Some key strategies to consider include:

- **Outreach and Awareness Campaigns:** organizational education programs, workshops, and hackathons to create awareness about the interesting and creative space calling AI for young minds while encouraging them to explore career avenues in this domain. Promote through social media and digital marketing to large-scale users some of their success stories with youth-led AI projects.
- **Mentorship and Skill Building Initiatives:** Create programs to partner young AI developers with industry professionals. Engage youth in experiential learning, workshops, and mentoring to build the technical capacity (skills), problem-solving ability (critical thinking) and values-based practice required for AI development.
- **Increase funding and resource allocation** for youth-led AI initiatives and companies. For example, cross-sector collaboration with government and academics might lead to the development of targeted financing requests or accelerators.
- **Foster inclusive governance** by including young people in the assessment and development of AI policy. Encourage youth engagement in policymaking and make sure their voices are heard when AI-related policies are developed.
- **Introduce AI-centered curriculum and experiential learning opportunities** in schools, colleges, and institutions to motivate students to explore how AI interacts with many domains such as social sciences, ethics, and sustainability. This will enable a thorough understanding of how AI technology might affect individuals, organizations, and society. By implementing these strategies, we can create a more inclusive and supportive ecosystem that empowers youth to actively contribute to the development and responsible deployment of AI, ultimately driving innovation and positive societal change.

Conclusion

The significance of youth voices in shaping and implementing AI for learning and education cannot be overstated. Young people's perspectives are crucial in ensuring that AI technologies are developed and used in ways that align with their needs, values, and concerns. Nurturing the voices of young people in AI development and deployment is, therefore, key to ensuring that these technologies are useful as well as responsible. Involving young people in making decisions related to AI and taking into account their perspectives has the potential to produce educational experiences that are better suited for all learners, promoting more inclusive learning spaces with increased engagement. Moreover, the voices of young people can help to shape ethical guidelines and norms for AI in education. Young people, as both stakeholders in an AI-powered learning system and eventual users of its outputs, have a role to play in helping spot potential biases, privacy, or ethical implications that could be present if the technology is used for education.

Engagement of young people can ensure that AI technologies/ algorithms are deployed in manners that are inclusive, fair, and transparent. In addition, the innovative and creative aspects of youth voices can contribute to building new forms of AI for learning. It is true that separateness rather creates unity, just as boundaries tend to bind us together in many facets of life and beliefs. Old age provides young people with an out-of-box culture where they can thrust the traditional ways aside with their novel disposition towards things. Their new eyes and different thinking can transform the way current effective AI tools into innovative, seek-to-build, looking-for-something-special solutions that serve all students' learning styles. Ensuring

that the AI systems are built by engaging youth voices in designing and deploying AIs for learning and education is crucial to developing inclusive, ethically responsive, and learner-centered AI Systems. So when young people are included in the processes that make decisions, and their inputs start being taken seriously, we can unleash AI to its full potential for improving learning outcomes, promoting Digital Literacy, and helping develop 21st Century Skills.

About the Author

Dr. Latifa Ziane Bouziane earned her Master's and Ph. D. degrees in general and comparative literature from Hassiba Benbouali University of Chlef, Algeria. Her doctoral thesis focuses on pandemic literature and its contemporary representations. Currently, she serves as a non-permanent instructor in the Department of English at Djilalli Bounaama University in Khmis Miliana, where she supervises master's students in languages and communication.

<https://orcid.org/0000-0003-0833-5967>

Funding: This research is not funded.

Acknowledgments: Not applicable.

Conflicts of interest: The authors declare no conflicts of interest.

Originality: This manuscript is an original work.

Statement on artificial intelligence: AI and AI-assisted technologies were not used.

References

- Abraham, L., Mathew, N. S., George, L., & Sajan, S. S. (2020). Vision- wearable speech-based feedback system for the visually impaired using computer vision. *2020 4th International Conference on Trends in Electronics and Informatics (ICOEI)(48184)*, 972–976. <https://doi.org/10.1109/ICOEI48184.2020.9142984>
- Ahn, M. J., & Chen, Y.-C. (2022). Digital transformation toward AI-augmented public administration: The perception of government employees and the willingness to use AI in government. *Government Information Quarterly*, *39*(2), 101664. <https://doi.org/10.1016/j.giq.2021.101664>
- Ayeni, O.O., Al Hamad, N.M, Chisom, O. N., Osawaru, B., & Adewusi,O.E. (2024). AI in education: A review of personalized learning and educational technology. *GSC Advanced Research and Reviews*, *18*(2), 261–271. <https://doi.org/10.30574/gscarr.2024.18.2.0062>
- Bennett, S., Maton, K., & Kervin, L. (2008). The ‘digital natives’ debate: A critical review of the evidence. *British Journal of Educational Technology*, *39*(5), 775–786. <https://doi.org/10.1111/j.1467-8535.2007.00793.x>
- Bhutoria, A. (2022). Personalized education and Artificial Intelligence in the United States, China, and India: A systematic review using a Human-In-The-Loop model. *Computers and Education: Artificial Intelligence*, *3*, 100068. <https://doi.org/10.1016/j.caeai.2022.100068>
- Brynjolfsson, E. (2023). The Turing Trap: The promise & peril of human-like artificial intelligence. *Augmented education in the global age*. oapen.org
- Casal-Otero, L. et al. (2023). AI literacy in K-12: a systematic literature review. *IJ STEM Ed* **10**, 29 (2023). <https://doi.org/10.1186/s40594-023-00418-7>
- Chen, L., Chen, P., & Lin, Z. (2020). Artificial intelligence in education: A review. *IEEE Access*, *8*, 75264–75278. <https://doi.org/10.1109/ACCESS.2020.2988510>
- Hagerty, A., & Rubinov, I. (2019). *Global ai ethics: A review of the social impacts and ethical implications of artificial intelligence* (arXiv:1907.07892). arXiv. <https://doi.org/10.48550/arXiv.1907.07892>
- Hernandez, K., & Roberts, T. (2018). *Leaving No One Behind in a Digital World. K4D Emerging Issues Report*. Brighton, UK: Institute of Development Studies. <https://opendocs.ids.ac.uk/opendocs/handle/20.500.12413/14147>
- Holmes, W., & Tuomi, I. (2022). State of the art and practice in AI in education. *European Journal of Education*, *57*(4), 542–570. <https://doi.org/10.1111/ejed.12533>
- Li, K. C., & Wong, B. T.-M. (2021). Review of smart learning: Patterns and trends in research and practice. *Australasian Journal of Educational Technology*, *37*(2), 189–204. <https://doi.org/10.14742/ajet.6617>
- Li, L., Yu, F., & Zhang, E. (2024). A systematic review of learning task design for K-12 AI education: Trends, challenges, and opportunities. *Computers and Education: Artificial Intelligence*, *6*, 100217. <https://doi.org/10.1016/j.caeai.2024.100217>
- Linaza MT, et al. (2021). Data-Driven Artificial Intelligence Applications for Sustainable Precision Agriculture. *Agronomy*, *11*(6), 1227. <https://doi.org/10.3390/agronomy11061227>
- Luckin, R., Holmes, W., Griffiths, M., & Forcier, L. B. (2016). *Intelligence Unleashed: An Argument for AI in Education*.

Pearson. <https://static.googleusercontent.com/media/edu.google.com/en//pdfs/Intelligence-Unleashed-Publication.pdf>

Mcdonald, N. et al. (2023). Ai through the eyes of Gen Z: Setting a research agenda for emerging technologies that empower our future generation. *Computer Supported Cooperative Work and Social Computing*, 518–521. <https://doi.org/10.1145/3584931.3611281>

Minich, J. A. (2023). *Radical health: Unwellness, care, and latinx expressive culture*. Duke University Press.

Yim, I. H. Y., & Su, J. (2024). Artificial intelligence (Ai) learning tools in K-12 education: A scoping review. *Journal of Computers in Education*. <https://doi.org/10.1007/s40692-023-00304-9>

Zhai, X. et al. (2021). A Review of Artificial Intelligence (AI) in Education from 2010 to 2020. *Complexity*, (1), 8812542. [wiley.com](https://www.wiley.com)

Cite as

Ziane Bouziane, L. (2025). The Significance of Youth Voices in Shaping and Implementing Artificial Intelligence for Learning and Education. *Atras Journal*, 6 (1), 137-150