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INCLUSIVE INFORMATICS IN HIGHER EDUCATION: ISSUES AND CHALLENGES

Computer science and informatics have become essential fields of study in the digital age, with a wide range of applications in various industries. However, the lack of diversity in the field has been a longstanding issue. To ensure that all students have access to quality education, it is crucial to promote inclusivity in higher education institutions. In this article, we will discuss the issues and challenges of inclusive informatics in higher education.

The active use of modern information technologies, both in the professional sphere and in society as a whole, presupposes the presence of deep knowledge and practical skills in this area among graduates of higher education. In this regard, the role of training young specialists in the field of computer science and information technology is increasing. This training should not be limited to teaching the basic skills of working in the software packages most used in the professional environment of a future specialist, but also to the formation of an information culture in the student as a whole.

The goal of the educational environment of higher education is to create conditions for the assimilation of the required educational material by every student who is willing and able to learn. By this, self-education and self-control, as well as the development of such technological teaching aids that help such an organization of the educational process, has become a priority. This approach is characterized by the transition from an orientation towards the average student to differentiated and individualized training programs.

Computer science and informatics are important fields in today's world, with a wide range of applications in various industries. However, there is a lack of diversity in the field, with underrepresented groups, such as women, minorities, and people with disabilities, being excluded. This lack of diversity can have serious consequences, including perpetuating stereotypes and biases, limiting the potential of the field, and hindering innovation and progress.

Lack of Diversity in the Field. The lack of diversity in computer science and informatics is a major challenge that must be addressed. According to the National Center for Women & Information Technology (NCWIT), women hold only 25% of all computing-related occupations in the United States. Additionally, underrepresented minorities, such as African Americans and Hispanics, hold less than 20% of all computing-related occupations.

Implicit Biases. Implicit biases are unconscious attitudes or beliefs that can affect how people perceive and interact with others. These biases can lead to discrimination and exclusion in the field of informatics. According to a study by the NCWIT, implicit biases can affect how teachers and peers interact with women and minorities in computer science classes, leading to feelings of isolation and discouragement.

Stereotypes. Stereotypes can also contribute to exclusion in the field of informatics. For example, the stereotype that women are not good at math or science can discourage women from pursuing a career in computer science or informatics. According to the National Science Foundation, women earn only 18% of all computer science degrees in the United States.

Lack of Support. Students from underrepresented groups may face additional challenges in the field, such as a lack of support and resources. This can include a lack of mentorship, networking opportunities, and financial support. According to the NCWIT, women are less likely than men to have a mentor in the field, and they are also less likely to receive research funding.

To address the challenges of inclusive informatics, it is important to implement strategies that promote diversity and inclusion. These strategies can include:

Awareness and Education. Increasing awareness and education about diversity and inclusion in the field can help to address implicit biases and stereotypes. This can include providing training to faculty and staff, as well as incorporating diversity and inclusion topics into the curriculum. It is important to raise awareness about the importance of inclusivity in informatics education, as it can have far-reaching implications for the field and society as a whole.

One strategy for increasing awareness and education is to offer training programs for faculty and staff on diversity and inclusion topics. This can include training on implicit bias, microaggressions, and cultural competency. By providing this training, faculty, and staff can become more aware of their own biases and learn strategies for creating a more inclusive learning environment.

In addition, it is important to incorporate diversity and inclusion topics into the curriculum. This can include including readings and case studies that focus on underrepresented groups in informatics, as well as creating opportunities for students to engage in discussions and activities related to diversity and inclusion. By integrating these topics into the curriculum, students can develop a better understanding of the importance of inclusivity in the field and become better equipped to address issues of diversity and inclusion in their future careers.

Creating a welcoming and supportive environment. Creating a welcoming and supportive learning environment is essential to promoting inclusivity in higher education. This can include providing mentorship, networking opportunities, and financial support to underrepresented students. By providing these resources, students from underrepresented groups can feel more supported and encouraged to pursue careers in informatics.

Mentorship is one strategy for creating a more supportive learning environment. By connecting students with mentors who have similar backgrounds or experiences, students can receive guidance and support from someone who understands their unique challenges and can provide advice on how to navigate the field. In addition, mentorship can help to create a sense of community among underrepresented students, which can be especially important for students who may feel isolated or excluded.

Networking opportunities are another important resource for underrepresented students. By providing opportunities for students to connect with industry professionals and other students, students can build their professional networks and learn about potential career opportunities. This can be particularly important for students from underrepresented groups, who may have limited access to these types of resources.

Financial support is also essential to promoting inclusivity in higher education. Underrepresented students may face additional financial challenges, such as higher levels of student debt or limited access to scholarships and grants. By providing financial support, institutions can help to ensure that all students have equal access to quality education.

Recruiting and retaining diverse faculty and staff. Recruiting and retaining diverse faculty and staff is another important strategy for promoting inclusivity in higher education. By hiring faculty and staff from diverse backgrounds, institutions can create a more inclusive learning environment and provide students with role models who reflect their own experiences.

However, recruiting and retaining diverse faculty and staff can be challenging. One barrier is the lack of diversity in the field of informatics as a whole. According to a report by the National Center for Women and Information Technology, women make up only 26% of the computing workforce, while African Americans and Hispanics make up only 9% and 7%, respectively. This lack of diversity can make it difficult for institutions to recruit and retain diverse faculty and staff.

To address this challenge, institutions can take some steps. One strategy is to partner with community organizations and industry partners to create pipelines for underrepresented groups in the field. This can include providing internships, scholarships, and other opportunities to underrepresented students, as well as partnering with community organizations to promote informatics education in underrepresented communities.

Another strategy is to create a more welcoming and supportive environment for diverse faculty and staff. This can include providing mentorship and support to faculty and staff from underrepresented groups, as well as creating opportunities for faculty and staff to connect with students from underrepresented groups.

Collaboration and partnership. Collaboration and partnership are also important strategies for promoting inclusive informatics in higher education. This can involve working with community organizations, industry partners, and other universities to create more diverse and inclusive learning environments. For example, universities can partner with community organizations to create internships and research opportunities for underrepresented students in the field or collaborate with industry partners to develop curriculum and research projects that address real-world problems and diverse perspectives.

Another important aspect of collaboration and partnership is creating networks and communities of practice for faculty and students from underrepresented groups. This can provide opportunities for mentorship, networking, and support, and can help to create a sense of belonging and community within the field. For example, universities can create affinity groups for students and faculty from underrepresented groups, or partner with professional organizations and associations to provide opportunities for networking and professional development.

Overall, promoting inclusive informatics in higher education requires a multifaceted approach that involves addressing systemic issues, promoting awareness and education, creating a supportive and welcoming environment for diverse faculty and students, and fostering collaboration and partnerships. By taking these steps, universities can help to create a more diverse and inclusive field of informatics and prepare students for successful careers in a rapidly changing global marketplace.

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СТВОРЕННЯ ВІРТУАЛЬНОЇ ОРГАНІЗАЦІЇ КНИЖКОВОЇ ІНТЕРНЕТ-ПЛАТФОРМИ

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