Submissions Abstract Book - All Papers (All Submissions)

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Information Sources and Access to German Computer Sciences Programmes: The Role of Gender, Age and Social Networks

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Research Domain: Access and widening participation (AWP)

Abstract:

Although student numbers in higher education are increasing, inclusion of particular groups is still not accomplished (Reay, 2016). One reason might be social capital (Bourdieu, 1974), particularly access to information and networks (Seibert, Kraimer & Liden, 2001). This paper focuses on the use of information sources for students' choice of study in Computer Science (CS) programmes in German higher education institutions (HEIs). We ask: Which information sources did CS students use for choosing their study programme at German HEIs? How do CS students evaluate these sources? Which differences can we observe by gender, age and social networks?

Based on a student survey conducted in 2018 (N=2,061), our findings show that especially conventional digital information sources, like websites, are used and evaluated as highly positive by students. Further, we find evidence that certain group of students, namely females, older students and students without prior contact with CS have difficulties finding information.

Paper:

Outline

In the last decades, the number of students in higher education (HE) increased rapidly in most parts of the world, including Germany. It was assumed that widening HE access would reduce or eliminate inequalities, but today's research show that the inclusion of particular groups are still not accomplished (Reay, 2016). Recently, special attention is given to the STEM field, especially in terms of gender equity (Best, Sanwald, Ihsen & Ittel, 2013). The inequalities accessing HE can be explained by different approaches. According to Bourdieu (1974), individuals have different levels of economic, social and cultural capital, which are correlated to their chances entering HE. In particular, research shows that social capital in form of access to information and networks might be linked to career opportunities (Seibert, Kraimer & Liden, 2001). In this context a number of international studies have been carried out. Briggs (2006) found evidence that information sources supplied by higher education

institutions (HEIs) are considered by students as one of the ten most important factors for study choice (Briggs, 2006). Previous research investigated a series of print-media information as a source for students' choice of study (e.g. Mortimer, 1997). Yet, recent studies underlined the importance of internal information developed by HEIs (Veloutsou, Lewis & Paton, 2004) and the internet as key information source for students, although disciplinary differences were identified (Simões & Soares, 2010).

However, there is need for a deeper understanding of the importance of information sources for accessing HE in Germany. Thus, this presentation will explore students' usage and evaluation of different types of information sources, especially digital information, for choosing their study programme. The case study consists of bachelor degree Computer Science (CS) students from public and private HEIs in Germany. We ask following questions: Which information sources did CS students use for choosing their study programme at German HEIs? How do CS students evaluate these sources? Which differences can we observe by gender, age and social networks?

In order to answer these questions, I will conduct an analysis of a CS student survey of the project FRUIT, which was funded by the German Federal Ministry of Education and Research (conducted in 2018, N=2,061). First, I conducted a descriptive subgroup analysis to compare the frequency distribution in the dataset. Then, I used a contingency table analysis to measure the strength and form of the relationship between the independent variables for gender, age and social network, including family/friends who are computer scientists and experiences with CS via events, school or hobbies, and the dependent variables for information sources.

The key findings show that students mainly used conventional digital information sources, as websites and internet portals to find out about their study programme and evaluated them as highly positive. In comparison, social media was used less often and was rated less helpful. However, social media was more favoured by females than males. After further investigation, evidence was found for certain groups of students with difficulties finding information about study programmes at HEIs. Women, older students and students without any prior contact with CS indicated more often for nearly all of the information sources listed in the questionnaire that it was not available for their study programme. In particular, statistically significant differences by gender, age, and social network were found for several information sources, including information events, internet portals, module handbooks, and social media.

In conclusion, our results give broader insights on information sources used for choice of study and access at German HEIs. In the search for their study programme, most students focused on typical sources of digital information. However, access to information might be more difficult for underrepresented groups in CS, like females and older students, or students without or limited social network regarding CS before entering HE. For these specific groups of students, this could be a disadvantage enhancing barriers to access this field of study.

Our study contributes to current research on inequalities and stratification in HE, especially information sources as factor for study choice for different types of students. In particular, it addresses the problem regarding gender imbalance in STEM study fields. Provided that certain groups of individuals have systematically difficulties accessing information, a greater effort could be required for them to enter this field of study. Thus, HEIs might need to take this into account while addressing prospective students with their study programme offerings.

References

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