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Paving Pathways for Educational Technology Talent: Connecting Fresh Graduates to Industry Opportunities in Indonesia

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Abstract: *The National Educational Technology Talent Survey (NETTS) addresses the gap between Educational Technology graduates and private sector job opportunities in Indonesia. By connecting students, alumni, and industry practitioners, NETTS fosters professional readiness and promotes the recognition of Educational Technology in diverse fields. Using a research and development framework, NETTS developed activities including job market surveys, webinars, and training workshops to enhance graduate competencies. Findings indicate a lack of awareness among students regarding industry roles, despite existing market demand. Positive feedback from alumni and participants highlights NETTS' potential to create a sustainable ecosystem for collaboration and knowledge exchange. Future initiatives should focus on expanding partnerships with industry stakeholders and student associations to maximize program impact.*

Keywords: *employment opportunities, equal access, education technology profession, life after university*.

1. INTRODUCTION

Industry and job market trends in Indonesia's learning specialties have changed significantly. One of the fields that has been affected is Educational Technology. Educational Technology is one of the sciences that is currently being sought after in the job market. One of the accelerators of this change is *E-Learning*, *Learning Management System* (LMS) and Artificial Intelligence (Putri Supriadi et al., 2022). Today, the field of educational technology is required to have extensive knowledge and skills in both learning, training and technology to support human performance in an organization (Devianto & Dwiasnati, 2020). This phenomenon creates a sizable job market boom for educational technology graduates.

Educational Technology, whose science is based on context and concepts, must also face the challenges of the labor market (Achyanadia, 2016). The needs of the job market with various competencies can be a challenge for new graduates of educational technology. Competencies required by the job market are diverse, not only scientific qualifications but specific to a particular technology making job seekers must always improve their competence in line with the demand from the industry (Zuwirna, 2019). The multidisciplinary nature of the field of educational technology itself provides flexibility for new graduates in developing their competencies to follow the job market. Preparing educational technology graduates to be ready

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to enter the job market is a shared responsibility between institutions, alumni and groups engaged in the field of educational technology.

Work readiness is one of the crucial aspects for a student. However, work readiness is not something that can grow as the student's semester increases. Therefore, improving work readiness is not only by being equipped with knowledge gained in the classroom. Work readiness can be grown by presenting components that are relevant to the world of work, such as practitioners, projects and final assignments, practitioner science, introduction to the main duties of a position in the industry to the apprenticeship process or work practice (Lakshmi & Elmartha, 2022). Generally, every student will undergo these activities but not necessarily these activities can foster work readiness from the internal side of the student, external pressure is needed to make work readiness present by force. Examples of external pressures such as financial burdens, personal needs and invitations from peers (Agustina & Dwanoko, 2021).

The role of alumni can also be considered in the environment of new graduates. Alumni who have become practitioners in the industry can be a source of knowledge for new graduates (Primasari, 2018). The presence of practitioners in the environmental ecosystem can open insights for new graduates about the real world of work, the competencies used to career paths in the field of educational technology (Octavia & Hamdi, 2023). The field of educational technology that continues to develop makes the presence of alumni can be a benchmark for how far learning innovations are present in the industrial realm compared to the learning provided in lectures.

Unfortunately, there is no place specifically for students to meet alumni and practitioners who have entered the industry. In Indonesia, there are a handful of driving organizations in the field of educational technology, namely *Asosiasi Program Studi Teknologi Pendidikan Indonesia (APS-TPI), Ikatan Profesi Teknologi Pendidikan (IPTPI) and Ikatan Mahasiswa Teknologi Pendidikan Seluruh Indonesia (IMATEPSI)*. The three organizations move according to their scope, but the three organizations do not yet have a focus on the non-governmental industry sector or private companies. This condition is a real gap between practitioners in the private industry world and new graduates and even prospective graduates of the Educational Technology program. IMATEPSI, which is the driving force for students, is limited to programs that unite students, still not reaching educational technology practitioners who have entered the private industry.

In fact, the availability of a forum specifically created to bring together practitioners, prospective graduates, new graduates and the technology industry has the potential to create a more ideal post-college ecosystem (Setiawan et al., 2019). The ecosystem of educational

technology is not only in academics, or researchers at universities, but the involvement of practitioners and industry in the scope of the labor market can also open insights into trends and issues of educational technology that are developing in the industry. The involvement of practitioners can also provide benefits for educational technology program organizers to prepare their graduates to be able to compete in the job market and continue their studies according to the needs of the job market.

Therefore, a program is needed that can connect prospective graduates, new graduates and practitioners. A program that can facilitate the need for job information, skills and knowledge sharing from both practitioners and students. The program developed is open to all people but still has a background in educational technology. The initiator of the program must also come from among the driving organizations in the field of educational technology, both from students and practitioners. Therefore, the aim of this research is to develop a program that can facilitate communication, information exchange, skills and competencies among prospective graduates, recent graduates and practitioners of educational technology.

2. METHODS

This research method uses a research and development design using *Logic Model Framework* (Weiss, 1998). In this framework, there are four main processes: problem identification or needs analysis, defining program components, developing visual models, and then testing solutions or visual models that have been developed.

The subjects of this development are students of Educational Technology at all universities in Indonesia. The implementation of the development was carried out at the State University of Malang because the initiators of the program were at the State University of Malang. The partners in this research are Teknologi Pendidikan ID (EDTECH-ID) and IMATEPSI. EDTECH-ID is a non-profit institution engaged in research, technology development and learning technology communities, while IMATEPSI is an institution that becomes a forum for students to collaborate between universities both in academic and non-academic scopes.

At the stage of determining program components, there are four main components that must be determined to create a visual model of the program. These components include, (1) program sub-resources, consisting of human resources that will contribute to the program, tools used to support the running of the program, and partnerships that will support the program's journey, (2) activities, activities that take place in the program to solve the solution at hand, (3) outputs in the form of data or information, (3) outcomes in the form of data or information,

which are achievements that can be measured to see the effectiveness or progress of the program, (4) short-term outcomes, which are the impacts given after the activity or activity is carried out and focused on the subject whose problems will be resolved, (5) long-term outcomes, which are the ultimate goal of the program developed, will generally be contextual and cannot be measured in a short period of time and are substantial in nature.

In the stage of creating a visual model of the program, the results of the analysis and identification of components in the previous stage are used. The visual model is used as a guideline for program development to achieve the planned long-term goals. However, in this research, comprehensive testing of all activities and components was not carried out due to the limitations of program development.

3. RESULTS AND DISCUSSION

Needs Analysis

In a survey conducted among 73 students from three public universities in Java, Indonesia, the majority of students were unaware of the opportunities for education technology graduates in the private industry. Most of them answered that they would become ICT teachers or SMK teachers in the field of graphic designers. In addition, not a few of them answered that they would focus on audio-visual content production such as designers, videographers and some even answered as developers of applications, multimedia, and learning websites. This is not wrong and is quite common, especially among students who have not been exposed to the private industry sector. Opportunities for educational technology professions in the private sector are not few, if you follow the terms of educational technology professions abroad, the terms are rarely known by the student audience. Examples of some terms in the field of educational technology include "*learning designer, learning coordinator, training officer, instructional designer, talent development*" and various other designations.

Although many positions are reserved for educational technology, the industry still does not recognize the science of educational technology as being in facilitating learning and improving performance. In the analysis of 109 job vacancies with openings in educational technology, the term educational technology could not be found. Most job vacancies were open to psychology or management graduates. One of the interviewees shared her experience of interviewing at a company where the employer had just learned about the field of educational technology and its areas of work.

In Indonesia, Education Technology graduates face limited recognition in industry outside of educational institutions. Companies often require qualifications in Management or Psychology for Learning and Development roles, despite Educational Technology being a more relevant foundation. This mismatch results in underutilized potential among graduates and a lack of pathways connecting them to industry opportunities. Therefore, this phenomenon was taken as the basis for the development of a platform for practitioners, prospective graduates and recent graduates of educational technology to be ready for the job market which will be known as the National Educational Technology Talent Survey or NETTS for short.

Identification of Program Components

On the resource aspect, NETTS was developed by a small group of 15 educational technology students and practitioners who came from various backgrounds and institutions. Most members come from the State University of Malang and the rest from the State University. The initiating institutions of NETTS are Educational Technology ID (EDTECH-ID) and IMATEPSI as well as sponsors in the implementation of the NETTS program. In addition to both EDTECH-ID and IMATEPSI, collaborators also come from among student associations from various universities, practitioners and alumni of educational technology who have entered the world of work are also sub-resources in the implementation of this program. In NETTS, the division of labor is carried out according to the expertise of the collaborating institutions, which can be seen in the Figure 1 which is divided into three main structures, namely the program chair, executive advisor and deputy program chair. In the implementation of this program, digital technology is also used to streamline coordination and execution of core activities. The technologies used are email, video conference calls, online survey platforms to research data processing applications and job vacancy data. The use of technology in NETTS is very important because of the difference in distance and time so it is not possible to run NETTS conventionally or face-to-face.

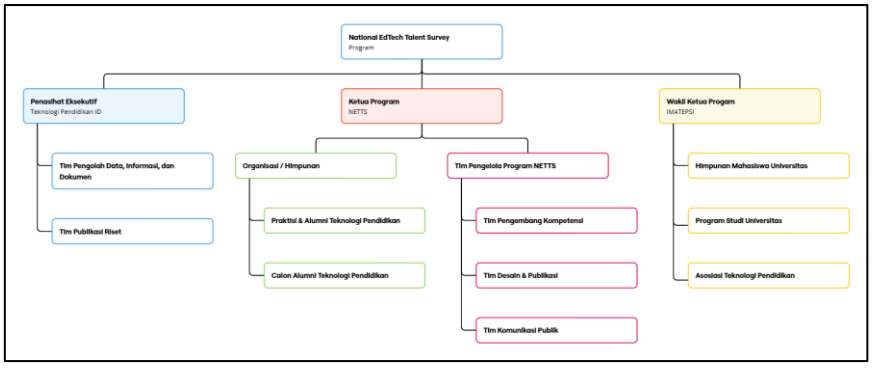

Figure 1 NETTS organizational structure and scope of work

In the activity aspect, the NETTS Program involves conducting surveys to assess the work readiness and skills of Educational Technology students and graduates. In the results of a survey that has been conducted at one of the universities that organizes educational technology, satisfactory results are obtained which can be seen in Table 1 . Most students have good work readiness, unfortunately experience in a professional context is still not owned. This is an opportunity to organize programs that can provide professional experience for prospective graduates and new graduates.

Table 1 descriptive work readiness survey

#	Self Efficacy	Optimism	Social Interaction	Academic Skills	Community	Self-Awareness
N	54	54	54	54	54	54
Mean	46.8	39.6	59.5	50.8	19.1	26.9
Median	47.0	39.0	59.0	50.0	19.0	27.0
Mode	45.0	39.0	57.0	45.0	16.0	26.0
Sum	2525	2137	3214	2745	1029	1455
Std. Dev.	5.99	4.56	6.60	6.34	4.24	4.37
Variance	35.9	20.8	43.6	40.2	18.0	19.1
Minimum	34	29	45	35	6	16
Maximum	56	49	70	63	28	35

Following the job readiness analysis, the NETTS team collected and analyzed job openings in Education Technology-related roles. The data collection process was conducted manually through various online job posting platforms. Job vacancies included in the data collection inclusion were those published in 2024, opening positions related to employee training and development, instructional designers and positions related to learning needs. As a result, 110 job vacancies aligned with the field of educational technology were found, which can be viewed at Figure 2 . Most job vacancies found focused on positions related to employee training and development. The companies that opened vacancies were mostly from industries that employ technical personnel who are on the production line or customer service.

Most vacancies seen are open to applicants with more than 2 years of experience. This long work experience can potentially be a stumbling block for new graduates who have never been exposed to the professional world of work. In the skills qualification section, there is no noticeable difference in each job posting. One of the most mentioned abilities is “Able to conduct Training Need Analysis (TNA)”, from this qualification it can be interpreted that the ability to develop training designs based on organizational needs and objectives is the minimum ability that must be possessed by every educational technology graduate. Therefore, it can be interpreted that the job market requires individuals who have the minimum competence to create training to improve worker performance. This ability

has also been provided by the study program to prospective graduates both in practice and theory.

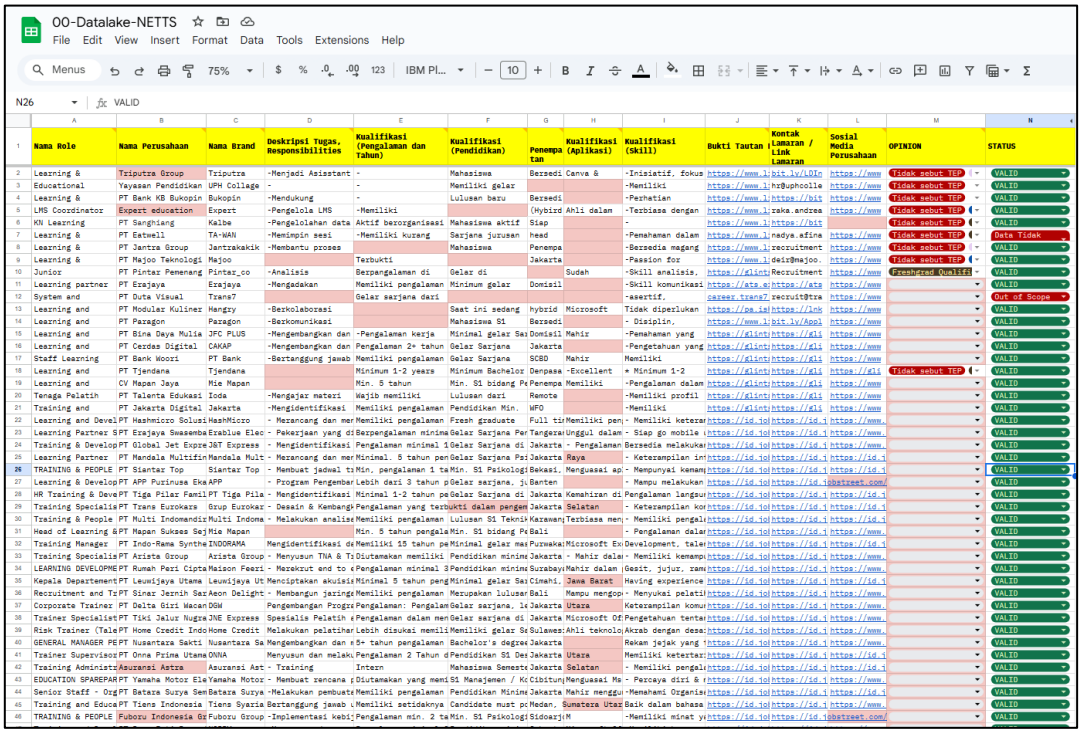

Figure 2 NETTS Jobs Datalake

In addition, NETTS organizes webinars and workshops to introduce alumni and practitioners in the industry and improve graduate competencies through targeted training. One of the webinars conducted was an introduction to the company's job market and socialization to the heads of educational technology associations at various universities, which can be seen at Figure 3 . In the webinar that was held, there were seven associations that participated in socialization activities along with a brief discussion regarding the roadmap of the NETTS program.

These webinars and workshops are crucial in implementing the NETTS program. Through the socialization program, prospective graduates and new graduates have an interest in current labor market conditions and could develop themselves through discussions with practitioners and alumni in the workshop activities carried out. Although webinars and workshops are not the core of NETTS, these two activities are the spearhead in introducing the NETTS program and the ecosystem it aims to create.

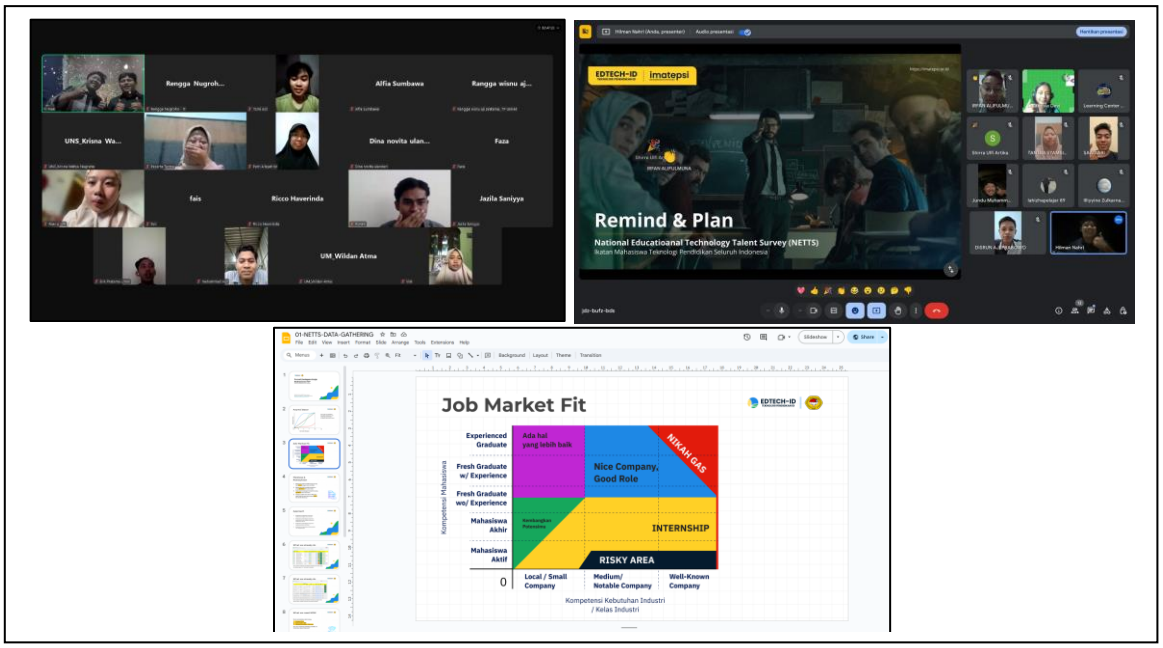

Figure 3 Implementation of the NETTS Competency and Program Introduction Webinar

Program Performance Indicators

To ensure that the program runs in accordance with the results of the needs analysis, a simple program output framework was developed to measure the performance of the program both from the internal and external sides of the program implementers. In the framework that has been developed, two types of outputs are divided into short-term outputs and long-term outputs, see Table 2 . Short-term outputs are the quantity of program implementation and tasks completed, while long-term outputs are the quality of the impact produced by the program.

Table 2 Performance Indicator of NETTS

Output Type	Output Type	Output Type	Output Type
Short Term	Student Participation	Students who participate in activities	230 Students
Short Term	Practitioner Participation	Practitioners who participate in activities as resource persons	25 Practitioners
Short Term	Association Participation	Associations that collaborate on the NETTS program	5 Associations
Short Term	Publications	Number of mass media publications about the NETTS program	35 Publications
Long Term	Institutional Collaboration	Companies or institutions that collaborate with NETTS	3 Institutions
Long Term	TEP Recognition	The existence of job vacancies that feature “Educational Technology” majors in their qualifications	3 job vacancies
Long Term	Ecosystem of practitioners and new graduates	Running the NETTS program independently through practitioners and graduates	6 months running

Program Visual Model

The visual model is a simple outline of the implementation flow of the program that has been developed, see Table 3 . In NETTS, program outcomes are the main benchmarks that guide program management to achieve the expected impact. Through the visual model that has been developed, NETTS program management has a more systematic work structure.

Table 3 Program Visual Model of NETTS

Models	Outcome / Performance
Input	Alumni, Industry, Practitioners, Webinars, Workshops, Job readiness and vacancy data
Activities	Job readiness survey, webinar and workshop implementation, job vacancy analysis
Outputs	The participation of students and practitioners, the implementation of webinars and workshops in accordance with performance targets, the database of readiness and job vacancies is published.
Outcomes	Increased work readiness and good competency improvement
Impact	Recognition of educational technology in industry and labor market

4. CONCLUSION

The NETTS program demonstrates significant potential to bridge the gap between Educational Technology graduates and industry demands. By addressing the disconnect between academic preparation and professional opportunities, NETTS provides a much-needed platform for prospective graduates, alumni, and industry practitioners to interact and collaborate.

The findings highlight the lack of awareness among students about the diverse roles available in private industry for Educational Technology professionals, coupled with a limited recognition of the field by employers. Through its initiatives, including surveys, webinars, workshops, and job market analyses, NETTS not only sheds light on these challenges but also actively works towards solutions by fostering readiness and equipping graduates with relevant skills.

Feedback from stakeholders, including alumni and students, reflects positive reception and a desire for expanded activities under the program. However, to maximize its impact, NETTS must scale its efforts, involving a broader network of universities, professional associations, and corporate partners. Strengthening this ecosystem will enhance the employability of graduates, align industry and academic expectations, and ensure the sustainability of Educational Technology as a recognized and respected discipline.

Future iterations of NETTS should focus on long-term outcomes, such as increasing job listings explicitly seeking Educational Technology graduates, building institutional collaborations, and creating a supportive ecosystem for ongoing professional growth. With

these efforts, NETTS can redefine the role of Educational Technology professionals and ensure their relevance in both academic and corporate environments.

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