



Research Roadmap of Graphic Design Study Program of Universitas Negeri Surabaya (UNESA)

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Abstract. Applied Undergraduate Graphic Design Study Program as the vocational Program of UNESA is one of the newly established programs which needs to develop a 15 (fifteen) year long-term research roadmap program in 2020–2035 and a short-term 5-year period. The purpose of this study is to describe the research road map of the Graphic Design Study Program of UNESA. The content of the Research Roadmap includes documented research activities in the study program during prior several years, the research plan, completed by the research direction plan. This study is the policy research according to Anderson (2011) by carrying out five stages: identification, formulation, adoption, implementation, and evaluation. Data were collected through interviews, documentation, and literature study. This research resulted in a research roadmap model for the Graphic Design study program. The road map is based on the expertise of lecturers in the study program and the research records. The study formulated the research Expertise Group (EG) of the Graphic Design Study Program in some expertise, namely graphic design in visual signs, graphic design in local culture, as well as graphic design and learning. The series of research roadmaps for the Graphic Design Study Program of UNESA were designed from the foundational research, small-scale applied research, and then large-scale research related to production, innovation, and industry.

Keywords: research roadmap · Graphic Design Study Program · graphic design

1 Introduction

In the Statute, Universitas Negeri Surabaya (UNESA) promotes “excellence in education and science” with research as one of their focuses: “to conduct research in science and/or technology that is beneficial to the development of science and the welfare of society”. The efforts to attain the university’s vision is by supporting scientific and creative works in the study program level. Thus, the research aims to develop framework for implementing scientific and creative activities carried out by lecturers and/or students, either in groups or independently, and may involve supporting staffs.

The focus of research in Indonesia is to explore science and technology under scientific principles and methods by prioritizing social, cultural, economic, humanitarian, and artistic values. For quality and useful outputs which are expected to support national

development. However, the change as the result of science, technology and global competition are inevitable, which significantly influence the development of arts and graphic design. To cope with this, Graphic Design Study Program of UNESA takes parts to develop strategies of optimizing research to achieve expected goals and ideals in arts and graphic designs.

The development of research programs in the study program certainly requires a strategic plan which takes into account the development of research, technology, and community development to achieve useful and meaningful results. The results are commonly measured based on the quality and quantity of research that had been achieved. To guarantee the quality, by placing policies and strategic programs should target sharpening excellent topics and themes that are formulated based on the vision and mission of the university.

To support Vision and Mission of UNESA, the Graphic Design Study Program as one of the newly established programs needs to develop a 15 (fifteen) year (2020–2035) long-term research roadmap program and a short-term 5-year period. The first short-term program is the research socialization stage (for 2020–2025), the second stage is research culture (for 2026–2030), and third stage is improving the quality of research to become a leading research university (for 2030–2035).

Preparation of strategic plans are in the form of research road maps, long-term research plans, existing competitive and market maps, self-evaluation. The preparation consider the pillars of research success and existing research domains in UNESA, as the following: (1) Language and Arts; (2) Sports Science; (3) Education of Children with Special Needs; (3) Natural sciences; (4) Education; (5) Nano and Advanced Technology (Nano and Advance Technology); and (6) Culture.

Research Roadmap of the Graphic Design Study Program in the Vocational school of UNESA as the umbrella for all research within the study program is translated into a map of areas of expertise, each of which is coordinated by the Chair of the Expertise Group (EG) in each study program. The research roadmap in the study program is portrayed based on the expertise of EG.

The roadmap is designed to reflecting the knowledge/vision of a group of researchers yet it is not limited as a consensus agreement. Achieving consensus becomes less profitable and counter-productive when it comes to developing a roadmap that opens new boundaries.

The value of road mapping and visioning for the future was evaluated according to the strength of the arguments and approaches, as well as the logic applied to the steps. The assessment of a roadmap involved visionary experts who master the target area of the study [1].

The outlines of Research Roadmap included research process and several research options as the form of a matrix format. The matrix consists of columns represented the steps in the research process while some rows in the table represented elements in the research design. This model allows novice researchers to find positions in the process and compare research designs, method choices, analyses, and interpretations. The matrix was designed to minimize possible misguidance and misinterpretation for researchers to make better research project choices [2].

The term of policy denotes the behavior of several actors or a group of actors, such as officials, government agencies, or legislatures, in a field of activity, such as in public transportation or consumer protection. Public policy refers to whatever regulators choose to do or not do [3]. Policy research is useful for formulating, evaluating, improving, and improving the quality of current and existing policies, as well as measuring the impact of existing policies through both qualitative and quantitative approaches [4].

Based on the background description of the problem, the objectives of this study is formulated as follows: (1) Describing the research expertise group of Applied Graphic Design Undergraduate Study Program in UNESA (2) Describing the fishbone visualization in a series of research roadmaps and community service for the Applied Graphic Design Undergraduate Study Program in UNESA.

2 Method

This research is policy research adapted by Anderson (2011). The following is an explanation of the stages of policy research [3].

1. Phase Identification of problems and setting the agenda. The focus is the way of problems as the target of public policy to be identified and recognized. The consideration in the point of view of policymakers requires an examination of agenda-setting, i.e. how government agencies decide what issues to address
2. Formulation Stage. This includes the creation, identification, or borrowing of a proposed course of action, often called an alternative or option, to resolve or remedy a public problem.
3. Adoption Stage. This involves determining the proposed alternatives, including taking no action, which will be used to deal with the problem.
4. Implementation Phase. It focuses on the steps to implement the adopted policy. It generally relates to the administration process of policy development or elaboration.
5. Evaluation Stage. This entails activities to determine the goal of policy, whether it achieves its objectives and whether it has other consequences.

To obtain the data, the study utilized following data collection techniques. The in-depth interview technique was used to obtain information from lectures of Graphic Design Study Program of UNESA. This research also compiled documents of from research reports and articles published by the lecturers. The secondary data collection technique was through literature studies carried out by researchers by collecting, reading and observing, studying and analyzing, and reviewing secondary data and other sources in the form of books and websites. Sources were relevant journals and websites which served as references in writing reports and published articles.

3 Result

The Development Master Plan (RENIP) 2011–2035 of UNESA is an academic text that provides an explanation of the concepts, paradigms, policy directions, strategic goals, and milestones for each Strategic Plan (abbreviated as Renstra, in Indonesian)

as the periodical, continuous and holistic master plan. The Document was used as the foundational source for developing the strategic plan to map the direction and strategy of developing the educational plan. Therefore, all polices in institutional development, human resources, infrastructure, learning, research, community service, and strategic partnership cooperation are directed towards one 3vision of UNESA 2035 [5].

Meanwhile, as UNESA is also the part of LPTK (Lembaga Pendidikan Tenaga Kependidikan or Institutes of Teacher Education), the university promotes research related to education as the first priority. The position of non-educational research is still required as the supporting knowledge for the development of educational research.

The direction of long-term development for UNESA 2035 is prepared in gradual and continuous stages. Each stage focuses on the main issues that become milestones starting from 2011–2015: Excellence University Governance, 2016–2020: Recognized National Teaching University 2021–2025: Recognized Regional Teaching University 2025–2030: Recognized National Research University 2031–2035: Recognized Regional Research University.

Based on the Unesa Business Plan 2020–2024, the fourth goal is: to produce excellent academicians, vocational staff, and professionals with the good moral, the strategies to be achieved are as follows [6]:

1. Improving research methodology and scientific writing for lecturers;
2. Improving and developing of scientific journal accreditation;
3. Increasing publication of research results and services through journals, scientific communication media, regional, national, and international seminars and workshops;
4. Developing information systems that support the publication of lecturers' scientific works;
5. Preparing and developing research and service road-maps according to scientific branches in the fields of education and non-education;
6. Increasing the quantity and quality of research and service under the latest developments in the scientific field;
7. Increasing research collaboration with partners (business people and the government);
8. Increasing the quantity of collaborative research with domestic and foreign universities;
9. Developing qualified teaching staff through education and training activities;
10. Developing learning system under the National Education Standards through research and development activities as well as the publication and dissemination of research and development results;
11. Providing and improving appropriate formal education facilities and infrastructure through research activities; and
12. Developing, publishing, and disseminating research and development results.

The strategies of UNESA in the field of research are implemented in various activities by focusing on the needs of the community and economical market as well the business, industry and schools (abbreviated as named as DUDIS).

Based on the Vocational Program Strategic Plan of UNESA 2021–2024 in research, efforts to increase the quantity and quality of research relates to innovation and techno-preneurship, especially in the rudimentary research, applied, and developmental study. The research map also serted with educational studies [7]. The number of research-based learning, student-centered learning, problem-based learning or case study models, and project-based learning.

Furthermore, the research roadmap also take into account prototypes of innovative, transformative, and applicable science, technology, and art products. The roadmap should consider only the research that supports the development of national strategic industries, the development of research-based industrial prototypes, and research-based product innovation.

As aforementioned, Vocational Program in graphic design directs research that are integrated with lectures' expertise, experiences and the implementation of student-centered learning. Furthermore, the vocational Program also focus on development research that can be adopted by industries, especially partner industries.

3.1 The Data from Lectures in Graphic Design

The lecturers of Graphic Design in the Vocational Undergraduate Study Program, UNESA consist of home-based lecturers for Graphic Design Diploma and Graphic Design Diploma totaling 7 lecturers. Their A educational background are from undergraduate and master degree (8%). 43% of lecturers have a diverse educational background of undergraduate and master degree, namely undergraduate in non-education field and master in education, undergraduate in education while master in non-education field.

The research themes of the Graphic Design Study Program of UNESA are miscellaneous within the scope of art and design due to the study program is still in the Department of Fine Arts. Nevertheless, there are some common research themes from two or more lecturers as these lecturers have grouped to conduct the same research. Thus, the theme of the research of Lecturer of the Graphic Design Study Program were divided into two categories, research in the implementation of learning and teaching and research in graphic design. Educational research themes include learning media and learning models. Design research themes include schools, graphic design, arts and culture, gender, advertising, and design management. The most research themes conducted by lecturers were graphic design themes (50%), and arts and culture and schools 14%.

3.2 Skill Group

Research on Social Humanities-Arts-Cultural-Education, also covers aspects of education and culture, which is necessary to develop participatory technology research especially to build a national identity. Therefore, the scope of the research are in four studies, (1) study of Socio-Cultural Development; (2) study on Sustainable Mobility; (3) study on Strengthening Social Capital; and (4) Economic and Human Resource Studies [8].

Based on the Regulation of the Minister of Research, Technology and Higher Education of the Republic of Indonesia Number 38 of 2019 concerning National Research Priorities (PRN) for 2020–2024. The research focus as follows: (a). Food; (b). Energy;

(c). Health; (d). Transportation; (e). Engineering; (f). Defense and security; (g). Maritime; (h). Social Humanities – Education–Arts and Culture; and (i). Multidisciplinary and Cross-Sectoral [9].

According to the national framework, the focus of Research on Social Humanities, Education, Arts, and Culture is aimed at synergizing the development of science and technology where solving problems related to technology development research (hard technology) is in line with solving social and humanities problems, including evaluating the national development policy system. In turn, the research carried out is useful for strengthening community institutions and overcoming problems of access to resources as well as addressing inequality and poverty. Strengthening national social capital through innovative curricula, as well as arts and culture research that supports tourism as a driver of the national economy. Research in the field of education and culture is directed at expanding access and improving the quality of education, developing innovative curricula and learning.

The research planning carried out by the Graphic Design Study Program, in general, is the development of environmental-based Graphic Design. As an effort to implement the plan, the lecturers in the study program assemble as groups based on research focus called further as expertise groups. The groups are expected to formulate research activities both individually and collectively while involving students in the research. This expertise group does not rule out the possibility of synergizing with each other, both between expertise groups and other multidisciplinary sciences. The research activities are then carried out regarding the compulsory direction of the research in the research roadmap as follows: (1) Educative content. (2) academic learning material; (3) educational complementary products.

3.3 Research Roadmap

The research roadmap describes three crucial components which are interrelated to one another, namely (1) research activities that have been carried out, (2) research activities that will be carried out in this period, and (3) research activities in the next period as the guidance for a researcher [10]. Based on the Ministry of Research, Technology and Higher Education standards the roadmap designs include some components [11]:

1. *Milestones* research activities in a certain space of time (5–20 years) carried out by researchers (mono-discipline) and or research groups either in multidisciplinary or intra/inter-disciplinary or industrial R&D (Research & Development).
2. R&D (Research & Development) roadmap, technology roadmap, and product roadmap.
3. One research roadmap can cover 3 parts at once: basic research (Research & Development), applied research (technology), and development research (product).
4. The road map should be displayed as a graph (x-axis is time, and y-axis (research activity axis) or fishbone diagram. Or other forms of diagrams, to make it easier to visualize the road map
5. A research roadmap is not a research path or method
6. The outcome of the roadmap can be in the form of intellectual property rights (IPR)

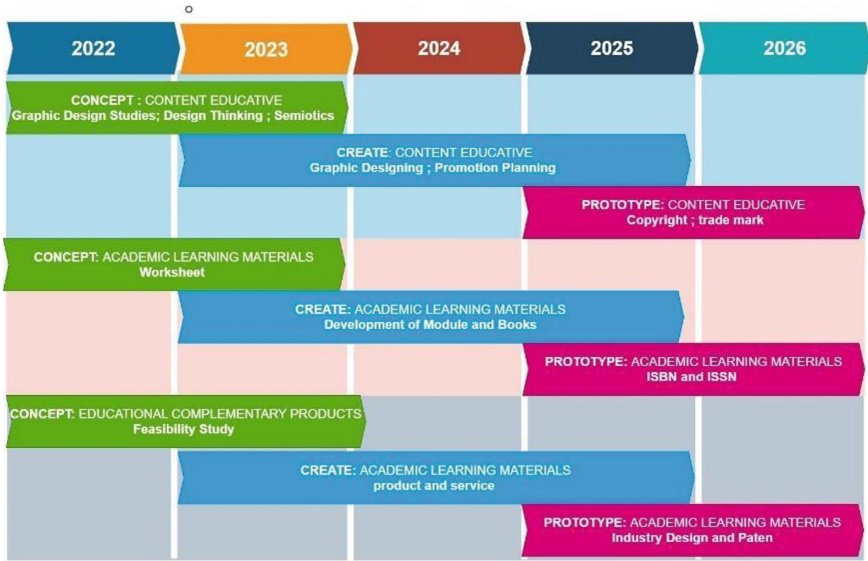


Fig. 1. Roadmap Research in Graphic Design Study Program (Source: Patria etc., 2021)

Elements in the preparation of a road map must display in the research plan, among others, relate to the elements of [10]:

1. HR data, title, focus, theme/topic, output, and downstream.
2. Projection of SWOT challenges and opportunities.
3. Excellence selection.
4. Projection of years and stages.
5. Allocation of budget, facilities, and organization.
6. Determination of quality review.

Graphic Design Study Program of UNESA declared the research topics for the next five years as in the theme of “Educational & Practical Visual Communication”. The theme was the result of contemplation that UNESA the research should still connect and develop the education program and utilities as the spirit of UNESA as the educational institution.

The strategy for developing the research road map is visioned to be implemented by considering the readiness and availability of resources in the Graphic Design study program with the following period stages:

4 Conclusion

The research road map of the Graphic Design Study Program is based on the expertise of the study program lecturers and the record of their research. The research expertise group of the Graphic Design Study Program of UNESA relates to graphic design in visual signs, graphic design and local culture as well as graphic design and learning.

The series of research roadmaps for the Graphic Design Study Program of UNESA are designed from the foundational research, followed by small-scale applied research and then large-scale research related to production, innovation, and industry (Fig. 1).

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