Development and Implementation of VCDLN-TVUPI Ecosystem Multi-platform Super-App in South Korea, Japan and Indonesia

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The research was motivated by the research product in 2020-2021 about VCDLN-TVUPI Flatform that to be sustain. This utilization process requires a new system that is oriented towards the Multiplatform Super-App Ecosystem in 2022 with focus on covering of Survey, Application Design, Development and production, whose impact is then measured with a number of indicators for online learning systems. This measurement process was carried out on teachers from Indonesia, Kora and Japan. The method used is R&D. The results showed that: (a) The results of survey show that the Multiplatform Ecosystem Super-app VCDLN-TVUPI program is highly recommended by teachers to continue; (b) Designing Super-App Multiplatform Business Process Business model, has been carried out using the DFD level 0 and DFD level 01 approaches;(c) Designing the Multiplatform Super-App has been developed according to the standard Super-App version for the convenience of the visual aspect with C++ programming procedures;(d) Generate Learning Video Content into Multiplatform Super-App VCDLN-TVUPI Streaming Portable version and Android Mobile Version has been carried out with quality industry standards;(e) The results of measuring of Multiplatform Super-App VCDLN-TVUPI are above the average and are able to reach the maximum score with a range from 178 to 199.

Keywords: Multiplatform super-app, VCDLN-TVUPI, Open distance learning.

1 Introduction

The existence of Teacher Professional Education is education in order to bring the quality of education for teachers to international standards. As stated in a number of education certification programs at the international level. One of the mecca for international standards in the professional development of teacher education such as Teacher Professional Education has also been tested by Microsoft (2021) through an international certification system for educators, one of which has the MCE (Microsoft Certified Educator) title. In order to prepare for this, of course, a number of teaching materials are needed at the international level. Thus, based on the results of research on teacher competence in Indonesia and Japan recommended by (Suryadi, 2019), it shows the importance of developing teaching materials that are international standards and are multiplatform. The online curriculum system (Department of Teacher Professional Education of UPI, 2020) is very much needed by educators as Teacher Professional Education students throughout Indonesia even for the members of the Education Council in Tokyo Japan. The objectives of this research include: (1) Collecting the data through survey to 9 TVUPI Studios in the West Java Region regarding the need for platforms to support Distance Learning services by teachers; (2) How to develop model designing the VCDLN-TVUPI Streaming Portable version of the VCDLN-TVUPI Super-App Multiplatform Business Process Business model; (3) What Kind the Designing Multiplatform Super-App VCDLN-TVUPI Business Process Model for Android Mobile version; (4) How to Develop Multiplatform Business Process Model Super-App VCDLN-TVUPI Streaming Portable version and Android Mobile Version; (5) How to Generate Learning Video Content into Multiplatform Super-App VCDLN-TVUPI Streaming Portable version and Android Mobile Version; (6) Measuring the advantages of implementing the Open Distance Learning Trial Service through the Multiplatform Super-App VCDLN-TVUPI Portable Streaming version and Android Mobile Version in Indonesia, Japan and Korea.

The output of this research is very complex, including: Survey to 9 TVUPI Studios in the West Java Region regarding the need for platforms to support Distance Learning services by teachers: (1) Designing the VCDLN-TVUPI Streaming Portable version of the VCDLN-TVUPI Super-App Multiplatform Business Process Business model; (2) Designing the Multiplatform Super-App VCDLN-TVUPI Business Process Model for Android Mobile version; (3) Develop Multiplatform Business Process Model Super-App VCDLN-TVUPI Streaming Portable version and Android Mobile Version; (4) Generate Learning Video Content into Multiplatform Super-App VCDLN-TVUPI Streaming Portable version and Android Mobile Version; (5) Measuring the advantages of implementing the Open Distance Learning Trial Service through the Multiplatform Super-App VCDLN-TVUPI Portable Streaming version and Android Mobile Version in Indonesia, Japan and Korea; (6) Measuring the advantages of implementing the Open Distance Learning Trial Service through the Multiplatform Super-App VCDLN-TVUPI Portable Streaming version and Android Mobile Version in Indonesia, Japan and Korea.

Likewise experienced by a number of professional organizations both at the local scale of the Subject Teacher Deliberation (STD) and Teacher Working Group (TWG), national regional such as PGRI and even international such as UNESCO and "Guru Ahli" T-Chain from South of Korea (2021). All of them have realized how important it is to immediately build the strength of effective communication systems and strategies in providing learning services for their students. One day it may be noted and it is certain that the development of the world of education has experienced a shift of almost 360 degrees in the interaction system created between educators and students. Of course this is happening globally, as reports from world research studies such as Finland, England, Germany, New York, Japan (Suryadi, 2019) that the learning system will become a rapidly growing system to form a digital learning community globally. Of course, the current phenomenon is required to always have a nuanced innovation stimulated by the Covid-19 outbreak. As one of the strategic thoughts on what is happening in this country, of course starting from the Ministry of Education and Culture's policies, participation and innovation in online digital learning (Villa-martinez, 2019), is a new force in the learning revolution in the era of "New Normal Education Practices" . From these conditions, the research team felt compelled to conduct research on the development of "Virtual Community Digital Learning Nusantara in the era of the Covid-19 Pandemic". In particular, the purpose of carrying out this research is expected to be able to accommodate all innovations and revolutions of learning steps through systems and business. The Research Purpose: (a) Survey to 9 TVUPI Studios in the West Java Region regarding the need for platforms to support Distance Learning services by teachers; (b) Designing the VCDLN-TVUPI Streaming Portable version of the VCDLN-TVUPI Super-App Multiplatform Business Process Business model; (c) Designing the Multiplatform Super-App VCDLN-TVUPI Business Process Model for Android Mobile version; (d) Develop Multiplatform Business Process Model Super-App VCDLN-TVUPI Streaming Portable version and Android Mobile Version; (e) Generate Learning Video Content into Multiplatform Super-App VCDLN-TVUPI Streaming Portable version and Android Mobile Version; (f) Measuring the advantages of implementing the Open Distance Learning Trial Service through the Multiplatform Super-App VCDLN-TVUPI Portable Streaming version and Android Mobile Version in Indonesia, Japan and Korea.

2 Theoretical Review

2.1 Regulation and Quality Control of Super-App Learning Ecosystem Mobile Learning

On April 3, 2020, in the conditions of the Covid-19 Pandemic, it was as if the new Ministry of Education and Culture had been entrusted with a strategic legacy of the ultimate weapon in maintaining the education and learning process so that it continues. One of the 5 Ministry Education And Culture Policies, including appealing to all basic education institutions to higher education institutions to be able to make partnerships in obtaining a number of platform support for the provision of online and digital learning systems. This is at least the Indonesian nation

has followed the appeal from WHO and observed the experiences of European countries that have already implemented the "New Normal" in the practice of education services,(Company, 2020). Where from the existing regulations, learning can be done at school for 3 days and at home is 2 days plus 2 days (Saturday and Sunday) can be used for Quality Control (QA) from Super-App Learning Ecosystem Mobile Learning together, teacher, and students.

2.2 Predictive of Element Super-App for Multiplatform of VCDLN-Learning

The strength of mobile learning is through the flexibility of time, place and under any conditions that are important to support the learning process. Some of the supporting elements in mobile learning are divided into three parts, namely system elements consisting of mobile learning resource websites, hardware and software with the support of a mobile learning system, and the third is brain ware or human resources as developers, admins and students themselves. and teachers who act as organizers of mobile learning. If it is linked from these four elements, it will be an important strength in mobile learning. Furthermore, it is expected that the learning setting elements in the Super-app system need to be further developed, it is explained that in the Super-app several development platforms are needed, as explained by (Rimale et al., 2016; Zhampeissova et al., 2020; Zhao, 2019) that *A Super App is many apps within an umbrella app. It's an OS that unbundles the tyranny of apps. It's the portal to the Internet for a mobile-first generation.* So mobile learning in the context of the Super-App has been widely developed as described,(Sharma et al., 2021) . So what is meant by efforts to develop a Super-App Ecosystem will be closer to learning settings, as explained in their research (Hamzah & Jamil, 2019).

2.3 Television Program Based on VCDLN

As discussed in the review of the Regulation on VCDLN in the section above, that the latest regulations and demands return to normal in new conditions, the implementation of VCDLN must be aligned with the New Normal Regulation (Tempo.com, 2020). Where as a form of VCDLN implementation in the context of the realization of this new normal condition, it will allow Blended Learning to be carried out. Of course, this Blended Learning has been regulated 2 years ago in Regulation of the Ministry of Research and Higher Education No. 51 of 2018. Thus the New Normal regulation is basically an indirect form of education and learning policies with face-to-face and Distance Learning (PJJ) digital systems, especially through the Television Broadcast Program. As in the past 10 months, we feel that the practice of education is building a virtual network for the future. As is known from the Google Classroom report, nearly 50 million people use it for online learning (Yuswohadi, 2020) Starting from simple and inexpensive e-learning systems to complex and expensive ones, everything is systematically designed, including in the form of television broadcasts. education. Researchers remember from one of the studies regarding the level of digital skills or literacy owned by the millennial generation or the Z-generation, where they were able to design digital learning information system lines in a number of universities. If analyzed from the regulation policy from Regulation

of the Ministry of Research and Higher Education, regarding the targets of implementing full online long distance learning at that time it is confirmed that it will produce 80% (Regulation of the Ministry of Research and Higher Education No.51 of 2018), the success of education that touches all corners of the archipelago.

3 Research Method

The research method is used as a plan for how a study is carried out. In order to be able to answer all the research problem formulations, a Research & Development (R&D) research or research methodology is often called. Research and development methods are research methods used to produce certain products and test the effectiveness of these product, (Creswell, 2014).This research will be done with a mix method procedure, however there are some addition and grouping that make it as seen on the figure below.

The research instrument in the form of questionnaire and test are used in this study. The purpose of this questionnaire is to get feedback and opinions from the research subject and the expert, in terms of user satisfaction and effectiveness of "Ecosystem Multiplatform Super-up for VCDLN-TVUPI" for Distance Learning Education Practices in Indonesia, Japan and Korea. The subjects of the study is teacher professional from 9 district and teacher delegation from Japan and "Guru Ahli" from Member of T-chain South Korea. For sample selection done randomly or by random area sampling.

4 Result and Discussion

4.1 Survey to 9 TVUPI Studios in the West Java Region regarding the need for platforms to support Distance Learning services by teachers

In this series of research, polls were produced to 9 City District Education Offices in West Java which had received research products in the form of the VCDLN access system. In an effort to meet the needs of a more democratic learning system that can be used anytime and anywhere. Of course, the development steps taken must take into account the quality of the content and the pedagogical aspects of learning, regarding research from (Lai et al., 2020). Based on this, the following are the results of a survey conducted to teachers in 9 districts and cities in Indonesia. Result of this survey can be see below on figure 1.
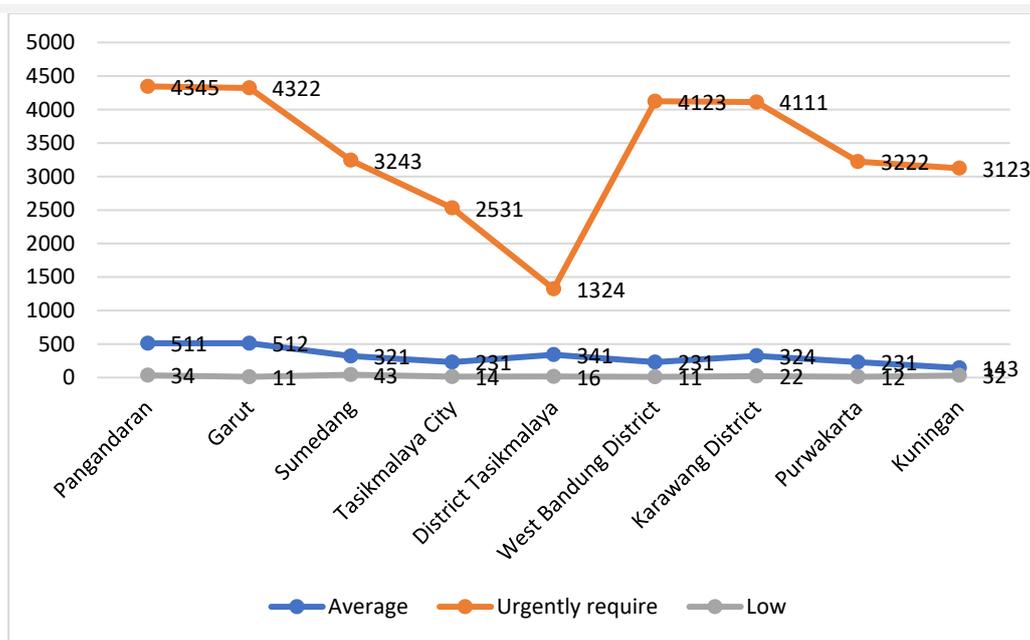
Figure.1 Data of Survey to 9 TVUPI Studios in the West Java Region regarding the need for platforms to support Distance Learning services by teachers

Nine regencies and cities in West Java province indicate that teachers expect massive development of the VCDLN-TVUPI platform with the number of opinions moving from 1324 to 4345 people. This opinion is very high and has become the basis in this research to develop a Super-App Mobile Ecosystem platform that can meet the expectations of 2845 teachers. This finding will be the basis for the development of the VCDLN-TVUPI mobile Super-App throughout the archipelago. This findings of this study are in accordance with personal research (Al-Jaber & Al-Ghamdi, 2020).

4.2 Designing the VCDLN-TVUPI Streaming Portable version of the VCDLN-TVUPI Super-App Multiplatform Business Process model.

In the process of developing a learning system according to the results of a survey to teachers, the stages will start from the VCDLNLearning.com. The development carried out is designed for user needs in portable and mobile formats. This is necessary considering that it is possible for teacher users in the regions to be served through a portable platform setting on a desktop computer. Meanwhile, those in urban areas will be served via a mobile format, considering that the majority of teachers in urban areas have laptops. Program Flow Design for Mobile Devices, as can be seen in the image below. This research is in accordance with research from (Hallberg et al., 2020).
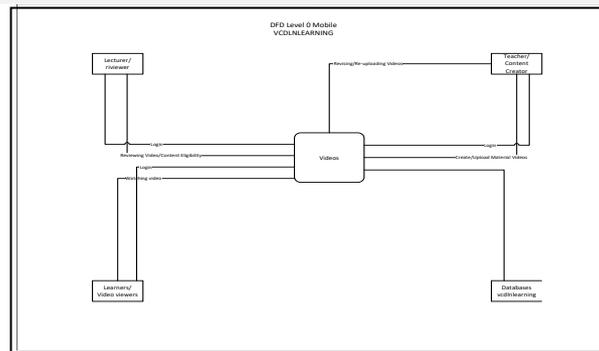
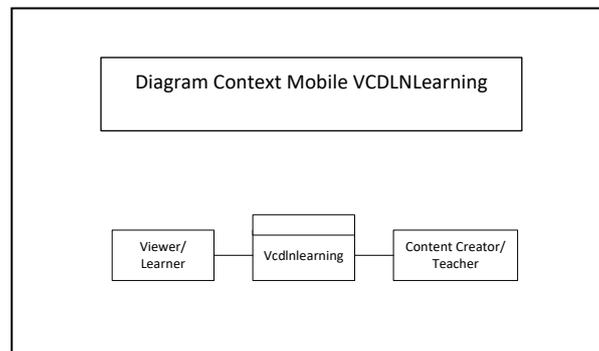Figure.2 DFD Level 0 for Program Flow Design for Mobile Devices

Figure.3 DFD Level 1 for Program Flow Design for Mobile Devices

The visual and complete design of the multiplatform Super-App VCDLN-TVUPI is a reference in the program of service activities and subsequent system development, (Rodríguez-López, 2021). Where all stages of development are adjusted to the ease of reference from the survey results to teachers in Indonesia, Korea and Japan.

4.3 Designing the Multiplatform Super-App VCDLN-TVUPI Business Process Model for Android Mobile version

In the system design process for the multiplatform Super-App VCDLN-TVUPI starting from the template design process using the C++ programming language, (Models et al., 2010). As an illustration of the programming carried out, below the researcher describes the coding that is intended when the user can access and visually view the content that can be accessed from available online databases. The address for the existing learning resources database has been provided on the https://vcdlnlearning.com page. From that page, teachers and students can use their mobile phones to view and study the required teaching materials. The following is a list

of coding from programmer commands to condition the visualizations that appear when the user is doing the learning process with the application that was built. This finding have relevance from (Strunga, 2015).

List Coding Program of Super-App VCDLN-TVUPI Multiplatform:

```
Function renderContinueWatchingSection() {
    return(
        <View
            style={{
                marginTop: SIZES.padding
            }}
        >
        {/* Header */}
        <View
            style={{
                flexDirection: 'row',
                paddingHorizontal: SIZES.padding,
                AlignItems: 'center'
            }}
        >
            <Text style={{
                flex: 1,
                color : COLORS.white, ...FONTS.h2
            }}
            >
            Continue Watching</Text>

            <Image
                source={icons.right_arrow}
                style={{
                    width: 20,
                    height: 20,
                    tintColor: COLORS.primary
                }}
            />
        </View>

        {/* List */}
        <FlatList
            horizontal
            showsHorizontalScrollIndicator={false}
```

```
          contentContainerStyle={{
            marginTop: SIZES.padding
          }}
          data={dummyData.continueWatching}
          keyExtractor={item => '${item.id}'}
          renderItem={({ item, index }) => {
            return(
              <TouchableWithoutFeedback
              onPress={() => navigation.navigate("MovieDetail",
{selectedMovie: item})}
                >
                  <View
                    style={{
                      marginLeft: index == 0 ? SIZES.padding : 20,
                      marginRight: index ==
dummyData.continueWatching.length - 1 ? SIZES.padding : 0
                    }}
                  >
                    {/Thumbnail/}
                    <Image
                      source={item.thumbnail}
                      resizeMode="cover"
                      style={{
                        width: SIZES.width / 3,
                        height: (SIZES.width / 3) + 60,
                        borderRadius: 20
                      }}
                    />
                    {/Name/}
                    <Text
                      style={{
                        marginTop: SIZES.base,
                        color: COLORS.white,
                        ... FONTS.h4
                      }}
                    >{item.name}
                    </Text>
                    {/Progres Bar/}
                    <ProgressBar
                      containerStyle={{
                        marginTop: SIZES.radius,
```

```
        }}
    barStyle={{
        height: 3
    }}
    barPercentage={item.overallProgress}
/>
</View>
</TouchableWithoutFeedback>
```

Based on the coding above, the results of the VCDLN Super-App mobile ecosystem program can be seen in Figure 4 below. Where every feature that is designed and then developed with access instructions can automatically call up the display of video content desired by the user. This innovation in the design of the Super-App mobile Ecosystem, (Hallberg et al., 2020) application is expected to be a program that is easier and faster to use by teachers in Indonesia.

Figure.4 Visual model of the learning video opening design on the Super-App Ecosystem Mobile feature.

Furthermore, the results of this design are further developed for the needs of multiplatform services that are connected to the content database website at https//:vcdlnlearning.com. This need is intended to realize the initial concept of a multiplatform program, according from (Models et al., 2010). This effort is carried out in the next step for conduct the open distance learning, according from (Tsai et al., 2021).

4.4 Generate Learning Video Content into Multiplatform Super-App VCDLN-TVUPI Streaming Portable version and Android Mobile Version.

During development, the number of learning content videos generated on the VCDLN-TVUPI Multiplatform Super-app system was around 112 videos, for implementation result research from (WANG et al., 2019). Existing content is processed and verified through an online digital system using industry-standard instruments. Efforts to verify industry standard content are

aimed at two aspects, namely the aspect of display quality and also the scope and sequence of the material presented. In addition, there are also interactive aspects and the speed and ease of access. As a visualization, it can be seen in Figure 5 below.

Figure.5 Visual Multiplatform Super-App Mobile VCDLN-TVUPI content generated

This product has an impact on the quality of being user friendly which is able to build an ecosystem among users, both teachers and lecturers, like (Sharma et al., 2021). From this product, the development is carried out on efforts to build the VCDLN-TVUPI Mobile Super-App which can be relied upon in strengthening and expanding all teacher users not only in Indonesia but also in a number of countries that need it and are members of the online and mobile digital learning community, like from (Reality & Bonds, 2011). As has been proclaimed by UNESCO in an effort to realize digital competence through certification to increase the skills of education in the digital era, (Mun et al., 2019).

4.5 Measuring the advantages of implementing the Open Distance Learning Trial Service through the Multiplatform Super-App VCDLN-TVUPI Portable Streaming version and Android Mobile Version in Indonesia, Japan and Korea.

From the measurement results during the implementation of online learning through the Multiplatform Super-App VCDLN-TUPI, data was obtained for groups of users both portable and mobile technology on Android mobile phones, support by (Yildirim-Yayilgan et al., 2016); (Li et al., 2018). The measurement data was carried out for teachers who teach in Indonesia, Korea and Japan, while the results can be mapped as follows.
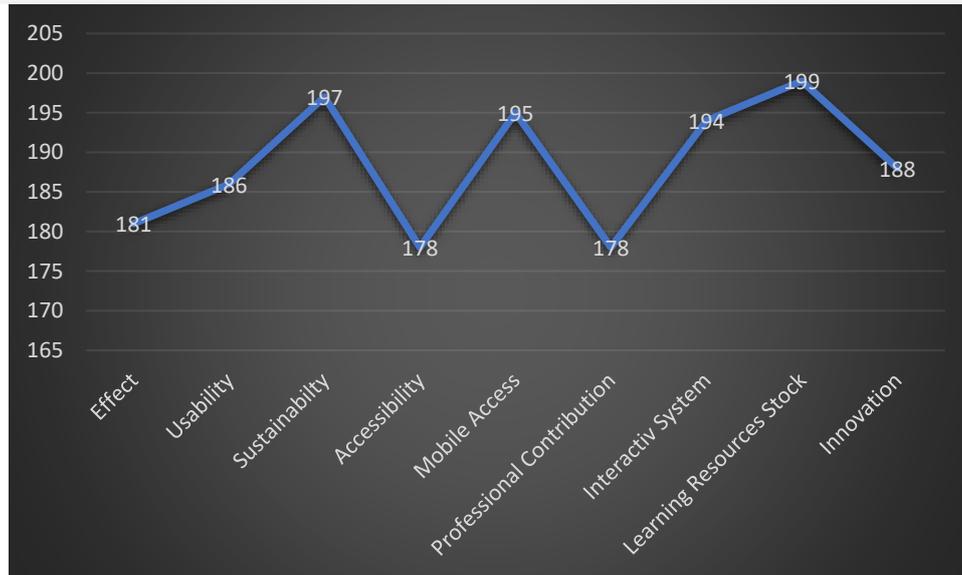
Figure. 6 Result of Measuring the advantages of implementing the Open Distance Learning Trial Service through the Multiplatform Super-App VCDLN-TVUPI

From the results of measurements involving teachers spread across three countries, namely Indonesia, Korea and Japan, the representation of Open Distance Learning (ODL) implementation opportunities through the Multiplatform Super-App VCDLN TVUPI shows homogeneous results, (Chohan et al., 2017); (Rudyanto et al., 2019). This level of homogeneity is both close to the ideal score of the highest score of 200, where this measurement is carried out on the indicators: (1) effect; (2) usability; (3) sustainability; (4) accessibility; (5) mobile access; (6) professional contributions; (7) interactive System; (8) learning resource stock; (9) innovation.

The nine measurement indicators for the implementation of the VCDLN-TVUPI Multiplatform Super-App in the implementation of open distance learning as has been done by the Indonesian Education University can be used as standards of excellence or best practices, this result support from (Kraleva, 2017). For example, for the sustainability of implementation management that is able to provide an impact on service independence and learning activities, conduct from (Kattayat et al., 2017). From the results of the measurement of the Effect aspect and the Innovation aspect, it is quite convincing that the scores reached 181 and 188 from the ideal achievement of 200. Likewise for the ease of building, producing and using products from the Multiplatform Super-App VCDLN-TVUPI, the measurement reached 186 from the ideal score. This finding in line to result of research from (Haddad et al., 2014)

For the results of measurement of aspects of sustainability and learning resources stock are able to achieve the maximum assessment of 197 and 199 from the ideal score of 200, thus efforts to continue to develop and utilize the Multiplatform Super-App VCDLN-TVUPI in Open Distance Learning (ODL) educational services are very promising, according from (Han et al., 2021). For measuring accessibility and professional contribution, it is able to reach a

score of 178. This is followed by the score achievements from the aspects of mobile access and interactive systems (Tawafak et al., 2021) which reached 195 and 194 from the ideal score of 200.

Conclusion

From the findings and discussion in this study, it can be concluded several findings which include: (a) Survey to 9 TVUPI Studios in the West Java Region regarding the need for platforms to support Distance Learning services by teachers, has been carried out through a continuous process. The results show that the Multiplatform Ecosystem Super-app VCDLN-TVUPI program is highly recommended by teachers to continue; (b) Designing the VCDLN-TVUPI Streaming Portable version of the VCDLN-TVUPI Super-App Multiplatform Business Process Business model, has been carried out using the DFD level 0 and DFD level 01 approaches;(c) Designing the Multiplatform Super-App VCDLN-TVUPI Business Process Model for Android Mobile version, has been developed according to the standard Super-App version for the convenience of the visual aspect. This design is followed up with C++ programming procedures;(d) Generate Learning Video Content into Multiplatform Super-App VCDLN-TVUPI Streaming Portable version and Android Mobile Version has been carried out with quality industry standards;(e) implementing the Open Distance Learning Trial Service through the Multiplatform Super-App VCDLN-TVUPI Portable Streaming version and Android Mobile Version in Indonesia, Japan and Korea, The results are above the average and are able to reach the maximum score with a range from 178 to 199.

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