ANDROID GAME APPLICATION DEVELOPMENT WITH POWERPOINT AS VOCABULARY LEARNING MEDIA

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Abstract

Learning English vocabulary is currently still less effective due to the lack of use of learning media or the inappropriateness of existing learning media, thus becoming an obstacle in learning English vocabulary for teachers or instructors. Therefore, the development of teaching materials in the form of Android game applications must be developed using PowerPoint media. The purpose of this research is to facilitate users' English vocabulary learning through interesting and interactive game applications. The research method used is research and development method. The result of this research is an Android game application that can be installed on a smartphone. This application has several features such as vocabulary modules, educational games, vocabulary exercises and vocabulary quizzes. When trying this application, users found that the program was very easy to use, in accordance with the curriculum materials and helped improve their English skills.

Keywords: *Development and Research, Learning Media Application, PowerPoint, Vocabulary*

Abstrak

Pembelajaran kosa kata bahasa Inggris saat ini masih kurang efektif karena kurangnya penggunaan media belajar atau ketidaksesuaian media belajar yang ada, sehingga menjadi kendala dalam pembelajaran kosa kata bahasa Inggris bagi guru atau pengajar. Oleh karena itu, pengembangan bahan ajar berupa aplikasi game Android harus dikembangkan dengan menggunakan media PowerPoint. Tujuan dari penelitian ini adalah untuk memfasilitasi pembelajaran kosakata bahasa Inggris pengguna melalui aplikasi game yang menarik dan interaktif. Metode penelitian yang digunakan adalah metode penelitian dan pengembangan. Hasil dari penelitian ini adalah sebuah aplikasi game Android yang dapat diinstal pada smartphone. Aplikasi ini memiliki beberapa fitur seperti modul kosakata, game edukasi, latihan kosakata dan kuis kosakata. Saat mencoba aplikasi ini, pengguna menemukan bahwa program ini sangat mudah digunakan, sesuai dengan materi kurikulum dan membantu meningkatkan kemampuan bahasa Inggris mereka.

Kata kunci: *Penelitian dan Pengembangan, Aplikasi Media Pembelajaran, PowerPoint, Kosakata*

Introduction

Mastering a foreign language's vocabulary is one of the most difficult aspects of acquiring that language. Lack of motivation and interest in learning, as well as difficulties with memory and recalling new vocabulary, are common obstacles to vocabulary acquisition for students. Two factors, namely external and internal factors, contribute to the difficulty of acquiring vocabulary in a foreign language. The causes of internal learning difficulties are: (1) the physical condition of the student, (2) the student's intelligence, (3) a lack of interest in learning, (4) a lack of learning motivation, and (5) the student's study practices. External causes of learning difficulties include (1) interference from peers during study, (2) presentation of less interesting material, (3) use of less massive media, and (4) selection of inappropriate methods (Sucandra et al., 2022).

Learning difficulties are caused by (internal) student factors, such as (1) physical fitness, (2) intelligence, (3) lack of interest in learning, and (4) lack of learning motivation. In addition, learning difficulties caused by (external) factors that are external to the student, such as (1) the interference of peers during study, (2) material displeasure, (3) suboptimal use of media, and (4) inappropriate method selection. The solution to the problem of learning English word management is (1) selecting a method that is appropriate for the student's situation, (2) maximizing the use of media, (3) presenting the material in a more engaging manner, and (4) developing language skills in a pleasant learning environment (Sondakh and Sya 2022).

Consequently, the utilization of engaging and interactive learning media can boost student motivation and accelerate the learning process. However, there are still a significant number of educators who do not employ engaging and interactive learning media in vocabulary instruction. Methods for acquiring vocabulary that emphasize memorization without context or application to real-world situations tend to be less effective. Additionally, a lack of practice and application of vocabulary in real-world situations can hinder vocabulary acquisition.

(Makoe and Shandu, 2018) Mobile learning technology is suitable for the Open Learning Context (KPT) because it is adaptable, accessible, readily available, and supports a variety of interaction activities. Therefore, the integration of technology and education must be strengthened through the development of learning media.

Rapidly expanding learning media are software-based media or, more commonly, software marketed as educational games (Irvan and Arni, 202). The use of learning media in the form of game applications can enhance the skills and engagement of students during the learning process. In addition, game applications can accelerate the learning process of students due to the enjoyment, interactivity, and difficulty inherent in the games. However, it is unclear whether the use of smartphones can actually enhance the learning process for students.

Multiple researchers have conducted studies on the use of smartphones in English language acquisition by students. Suwantarathip and Orawiwatnakul conducted research and concluded that there are two groups: the first group utilizes a mobile application, while the second group prefers the conventional method. According to the results (Suwantarathip and Orawatnakul, 2014), the first group outperformed the second. Zou and Li (2015) conducted a study to determine how Android applications can be incorporated into the English teaching and learning process both inside and outside of the classroom. The findings demonstrated that mobile applications can be utilized both inside and outside of the classroom. In addition, learning via smartphone applications has a significant impact on student achievement and capabilities (Elfeky & Masadeh, 2016).

In the context of learning a foreign language's vocabulary, gaming applications have also proved to be effective in enhancing language abilities. However, in order to create learning media in the form of game applications, knowledge of programming languages is required, which may pose a problem for instructors or teachers with limited experience in the field.

In this case, Powerpoint can be an effective alternative for instructors or teachers who want to create game applications as vocabulary learning media but lack in-depth programming language knowledge. By incorporating animation and interactivity features, instructors can easily create interactive gaming applications with PowerPoint. PowerPoint has a variety of design-altering features (de Wet, 2006) that make it simple for users to modify the presentation's appearance. (Anwar, 2016) PowerPoint as an interactive learning medium can increase student motivation and interest in learning.

In this study, the conversion of PowerPoint presentations into Android game applications will be discussed as a vocabulary-learning tool. This conversion process will enable the structured and organized vocabulary information in Powerpoint presentations to be transformed into Android-compatible gaming applications. This application was selected because teachers and instructors are familiar with it and because it facilitates interactive learning. In accordance with this, PowerPoint has three distinct advantages: it is readily available in the majority of classrooms, its use by teachers is directly related to the integration of technology, and teachers enjoy using it (Rieber et al., 2009). This gaming application will include a variety of interactive elements, including word-guessing games, multiple-choice questions, and aural pronunciations of vocabulary words.

A mobile application development platform that does not require programming skills will be utilized to create this vocabulary learning game application. In addition, the vocabulary material presented in the game application must be tailored to the student's skill level in order for it to assist students in learning vocabulary progressively and efficiently.

Through the use of this vocabulary learning game application, it is hoped that students will acquire vocabulary in a more engaging and interactive manner. Through repetition and game variation, these gaming applications can also aid students in remembering vocabulary.

Consequently, this vocabulary-learning game application can serve as an alternative learning medium that is both engaging and effective for enhancing students' vocabulary mastery.

Rokhman and Ahmadi's (2020) study entitled "Development of an Android-Based Educational Game for Si Gelis to Improve Students' English Vocabulary" Utilizing the ADDIE development model, which entails Analysis, Design, Development, Implementation, and Evaluation, the technique employed is Research and Development. This study's findings indicate that this educational game can enhance second-grade students' English vocabulary skills. The trial application to as many as 20 students increased the average class score by 32 points (Rokhman and Ahmadi, 2020). In this study, however, game applications were developed using applications and programming languages requiring specialized skills and knowledge, necessitating specialized programming expertise. In contrast to future research, the development of game applications using PowerPoint as a vocabulary learning medium can be accessed by instructors or teachers without programming language expertise.

PowerPoint and Ispring: A Combination for Android-Based Mathematics Learning Media is the subject of Bana, Sergius, and Irna's (2020) study. The employed methodology is Research and Development. This study examines the implementation of ispring and PowerPoint in the creation of android-based mathematics learning media. However, in the aforementioned study, the developed learning media is mathematics learning media. In this investigation, the developed learning materials focused on foreign language vocabulary.

Research by Santosa and Adi Jaya titled "Developing Android-based English vocabulary learning materials for primaryschool students" The employed methodology is Research and Development. The results demonstrated that the application is of high quality and suitable for installation and use on Android smartphones. (Santosa, Pratama, and Putra 2020). However, in the above study, the developed learning materials were geared toward the elementary level. While the focus of this study was on the secondary school level. Consequently, there are various levels of vocabulary material later on.

Although a number of previous studies have utilized PowerPoint to create game applications, this is the first to do so. This study concentrates on learning foreign language vocabulary at the high school level by optimizing PowerPoint features. Previous studies' positive effects, perceptions, and development provide additional information for the development of the intended product in this study. In addition, it is anticipated that this research will contribute to the development of more effective and efficient vocabulary learning media.

The issue that arises in this study is how to create an effective vocabulary-learning application for Android using PowerPoint without requiring in-depth programming language knowledge. The proposed hypothesis is that developing an Android game application using PowerPoint as a development medium will increase the efficacy of students' vocabulary learning. Existing Android game applications can be used as an alternative solution; however, they do not always match the existing material and are less effective at meeting specific vocabulary learning requirements. The selected solution is the creation of adaptable game applications for Android using PowerPoint as a development tool. The purpose of this study is to develop an Android application that can improve students' ability to increase their English vocabulary and make it simpler for teachers to design effective vocabulary learning without the need for programming language knowledge..

Research Method

This investigation employed the Research and Development design model research methodology (Richey and Klein, 2014). In order to implement this model, researchers must engage in three primary processes: Design, Development, and Evaluation. Design is the process of conducting a needs assessment in which researchers analyze the requirements of elementary school students in English language learning and the curriculum for class X to determine which English topics are appropriate for use in the developed product. Later, the requirements of students and English-related topics serve as guidelines for the design of gameplay and product layouts. In the development phase of the product development process,

researchers use the outcomes of a requirements analysis as a foundation or point of reference when creating new products. Several sub-processes are performed using computer applications to develop products in this procedure. Evaluation is the process of assessing the quality of a product using qualitative and quantitative evaluation to determine the product's strengths and weaknesses. A few modifications were also made as a result of the evaluation's findings.

This study was conducted in April 2023 at one of the Madrasah Aliyah schools in the Bone district, with 30 tenth-grade students and two Madrasah Aliyah Bone English teachers as subjects. Students are chosen using systematic sampling techniques. There are two instruments used in data collection: questionnaires and product evaluation forms. Thirty tenth-grade students in one of the Madrasah Aliyah schools in the Bone district were given questionnaires to determine their expectations regarding the English-learning process and their attitudes toward mobile phone applications. To determine the quality of the product, English teachers and a few specialists are issued evaluation sheets.

Data collection involves multiple stages, including 1) requesting permission from schools, 2) distributing questionnaires, and 3) conducting data analysis. The first stage was to send a letter of approval to the selected principal and request permission to conduct class X student research there. The second phase involved distributing surveys to student respondents. The final stage was to conduct an analysis of the collected data.

Students were provided questionnaires, and the results of the questionnaires were descriptively analyzed. Students' and teachers' needs, current learning environments, and concerns were gathered through surveys and used as a guide for developing Android application products. Several applications, including Microsoft PowerPoint, iSpring, and Andaired, are utilized in the product development process. On a basic note, the content and all views of the application are created using Microsoft PowerPoint, which is then converted or converted into an Android application using Andaired. Teachers and specialists are provided evaluation sheets to assess the quality of a product. The average value is calculated using SPSS on the evaluation sheet.

This section presents some intriguing findings derived from the preceding data collection. The data consists of student and teacher needs acquired from surveys, design and development process findings, and product quality evaluated by English teachers and experts using product evaluation sheets.

Regarding the first need, which was to determine the requirements of students in learning English vocabulary, the survey revealed that twenty students (66.67%) lacked sufficient time to study English. In other words, more than half of students believe they require additional time to study English in school. Additionally, 18 (60%) students rarely spend time at home acquiring English. That is, more than half of students do not have sufficient leisure at home to study English. Teachers recommend that students review their schoolwork at home.

Concerning the second need, it is necessary to determine whether or not students concur with and are interested in using Android applications as a means of learning. The results of the survey indicated that 30 students (100%) were proficient in the use of smartphones. And 26 students (86.67%) frequently used smartphones at home. 30 students (100%) found smartphones beneficial for learning English, and 28 students (93.3%) agreed to use Android apps to learn English. This necessitates the development and immediate use of smartphone applications by students to acquire English. According to the results of the requirements analysis survey, students and teachers have a significant need for learning media, and it is highly effective to create Android application-based learning media due to the widespread use of smartphones by students. Additionally, the intriguing Android gaming program.

After the testing phase, students, instructors, and experts were asked to complete a questionnaire to determine the efficacy of the Android application. The results of a survey of tenth-grade students' usage habits are used to capture data, which is followed by validation and usability tests of instructional media. The following criteria are used to evaluate the results of this learning media application's validity:

Table 1. Learning Media Validation Category (Purwanto 2013)

No.	Achievement Level (%)	Validity Level
1.	0% - 20%	Highly Invalid
2.	21% - 40%	Less Valid
3.	41% - 60%	Quite Practical
4.	61% - 80%	Valid
5.	81% - 100%	Highly Valid

The practicality test stage uses the assessment of practicality categories as follows.

Table 2. Categories Practicality of Learning Media (Purwanto 2013)

No.	Achievement Level (%)	Level of Practicality
1.	0% - 54%	Impractical
2.	55% - 59%	Less Practical
3.	60% - 75%	Quite Practical
4.	76% - 85%	Practical
5.	86% - 100%	Very Practical

Result and Discussion

The result or product of this development research is an Android game application that can be installed on a smartphone and is designed to assist students in the tenth grade in learning English vocabulary and is tailored to the curriculum. The results of application evaluations conducted by students, instructors, and experts are depicted in diagrams that include assessments of learning media graphics, material suitability, and student use.

The validation results for this learning media application have been processed and presented as diagrams. Figure 1 displays the results of media expert validation for each aspect of the evaluation.

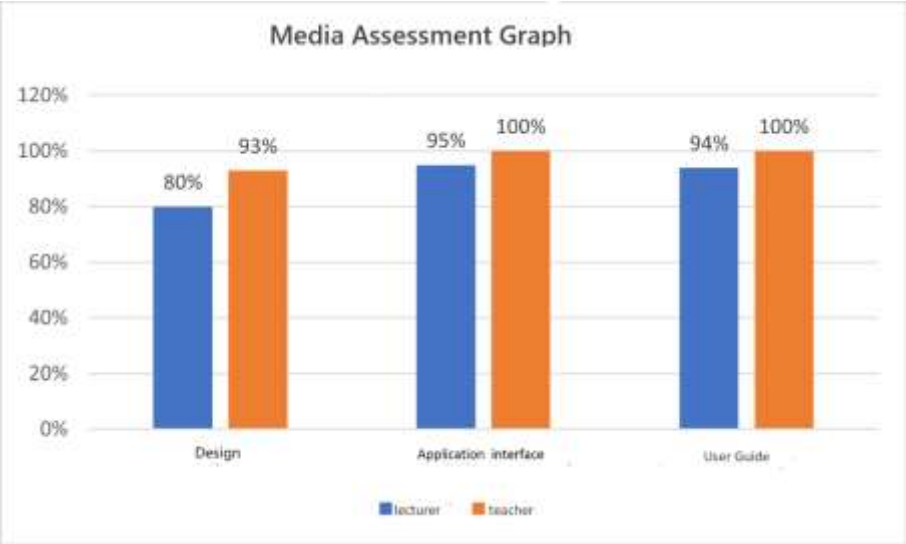

Figure 1. Media assessment survey result diagram

Figure 1 displays the results of the media experts' and teachers' evaluation of the application of learning media, with the aggregate value of learning media applications receiving a score of 93.67 percent. The results of data processing are then converted using data conversion references for valid assessment categories, allowing for the categorization of the media aspects of learning media applications.

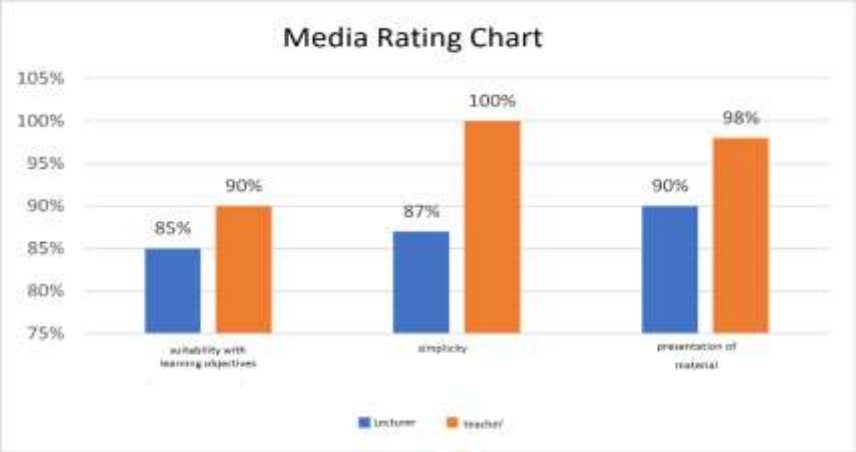

Figure 2. Material assessment survey result diagram

Figure 2 depicts the results of an evaluation of the application of learning media from multiple perspectives, including aspects of suitability with learning objectives, simplicity, and material presentation. The overall value of learning media applications is 91.67 percent. The results of data processing are then converted using data conversion references for valid assessment categories, allowing for the categorization of the media aspects of learning media applications.

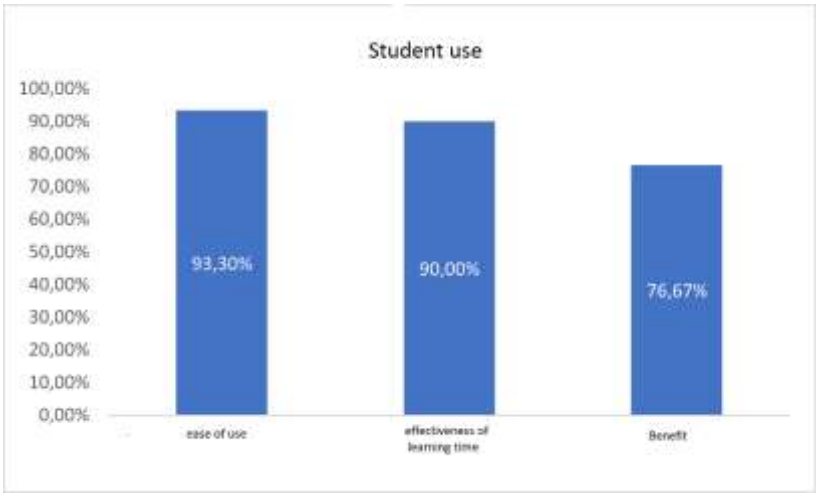

Figure 3. Survey results chart of app usage by students

Figure 3 demonstrates that learning media applications receive an overall score of 86.6% based on the results of the practicality test's evaluation of multiple factors, namely ease of use, efficacy of learning time, and benefits. After these results have been converted using the provisions of pragmatism assessment data conversion, applications can be categorized based on the practicality category of learning media using very practical criteria.

Android game applications that utilize PowerPoint as a vocabulary-learning tool are an innovative and effective method for enhancing students' ability to increase their English vocabulary. This application provides students with an interactive and entertaining learning environment to encourage them to actively acquire English vocabulary. Android game applications with PowerPoint as a vocabulary learning application include vocabulary modules, educational activities, learning progress statistics, quizzes or exercises, and a visually appealing design.

The development of Android game apps utilizing PowerPoint as a vocabulary learning tool can assist educators in designing effective vocabulary learning without the need for programming language skills. Some believe that using PowerPoint to design apps is a practical

way to incorporate design into the classroom (Rieber et al., 2009). This is despite the fact that there are far superior design tools for designing apps.

This can help teachers enhance the quality of English vocabulary learning and provide more engaging learning opportunities for students. There are both benefits and drawbacks to using Android gaming apps and PowerPoint for vocabulary acquisition. Its advantages include usability, interactivity, and curriculum adaptability. The disadvantages are the application's limited vocabulary, reliance on technology, and absence of social interaction during learning.

The findings of this study also indicate that Android game applications that use PowerPoint as a vocabulary tutorial contribute significantly to the field of education. This application can make learning English vocabulary more interactive and enjoyable for students. In addition, this application can assist instructors in planning versatile and efficient English vocabulary instruction. To enhance the effectiveness and quality of applications, they must be continuously evaluated and enhanced. Evaluation can involve evaluating the application with students, mapping students' impressions of the application, and involving students in the application's use. Developing Android game applications using PowerPoint as a vocabulary-learning tool is a promising strategy for enhancing students' ability to increase their English vocabulary. However, in order to increase the efficacy and quality of the application, it must be continuously evaluated and enhanced.

Conclusion

This research was conducted to develop an effective Android application for learning English vocabulary without extensive programming language knowledge. It is hoped that this application will enhance students' ability to expand their English vocabulary and make it simpler for teachers to plan effective vocabulary instruction. Teachers and trainers can use this method to make other learning aids more effective and engaging, in addition to English vocabulary.

Reference

Anwar, A. (2016). Penggunaan Powerpoint sebagai Media Pembelajaran Interaktif. *Jurnal Teknologi Informasi dan Pendidikan, 9*, 83–92.

Elfeky, Mohammed, A.I., dan Masadeh, T.S.Y. (2016). The Effect of Mobile Learning on Students' Achievement and Conversational Skills. *International Journal of Higher Education, 5*(3). https://doi.org/10.5430/ijhe.v5n3p20.

Irvan, M. dan Arni, R. (2022). Penggunaan Game Edukasi Dengan Educandy Sebagai Alternatif Pembelajaran Kosakata Bahasa Jepang. https://proceedingsminasan.fbs.unp.ac.id/index.php/minasan/issue/view/5

Makoe, M., dan Shandu. (2018). Developing a Mobile App for Learning English Vocabulary in an Open Distance Learning Context. *International Review of Research in Open and Distributed Learning* 19.

Purwanto, M. N. (2013). *Prinsip dan Teknik Evaluasi Pengajaran*. Bandung: PT Pemuda Risdakarya.

Richey, R.C., dan J.D. Klein. (2014). *Design and Development Research: Methods, Strategies, and Issues*. 1st Edition. New York: Routledge. https://doi.org/https://doi.org/10.4324/9780203826034.

Rieber, Lloyd, Michael Barbour, Gretchen Thomas, dan Dawn Rauscher. (2009). Learning by Designing Homemade PowerPoint Games. Dalam *Games: Purpose and Potential in Education*, disunting oleh Christopher Thomas Miller, 1st Eds, 23–42. Boston, MA: Springer US. https://doi.org/10.1007/978-0-387-09775-6_2.

Rindiani E. Bana, Dethan P. Sergius, dan Blegur K.S. Irna. (2022). Powerpoint dan Ispring: Kombinasi untuk Media Pembelajaran. *Seminar Nasional Tadris Matematika (SANTIKA)* 2.

Rokhman, Nur, dan Farid Ahmadi. (2020). Pengembangan Game Edukasi si Gelis Berbasis Android Untuk Meningkatkan Kosakata Bahasa Inggris Siswa. *Edukasi*, *14*(2), 166–75. https://doi.org/10.15294/edukasi.v14i2.27477.

Santosa, Made Hery, I Putu Surya Pratama, dan I Nyoman Adi Jaya Putra. (2020). Developing Android-Based English Vocabulary Learning Materials for Primary School Students. *JEELS (Journal of English Education and Linguistics Studies), 7*(1), 161–85. https://doi.org/10.30762/jeels.v7i1.1467.

Sondakh, Delfina Christie, dan Mega Febriani Sya. (2022). Kesulitan Pembelajaran Kosakata Bahasa Inggris Tingkat Sekolah Dasar. *Karimah Tauhid*, *1*(3), 346-51. https://ojs.unida.ac.id/karimahtauhid/article/view/7818/3511.

Sucandra, S., Budiman, M. A., & Fajriyah, K. (2022). Analisis kesulitan penguasaan kosakata pembelajaran muatan lokal bahasa inggris pada siswa kelas iv di sd plus latansa kabupaten demak. Wawasan Pendidikan, 2(1), 71–80. https://doi.org/10.26877/wp.v2i1.9664

Suwantarathip, O., dan W. Orawiwatnakul. (2014). Summary for Policymakers. Dalam *Climate Change 2013 – The Physical Science Basis*, 1–30. Cambridge University Press. https://doi.org/10.1017/CBO9781107415324.004.

Wet, Catharina F. de. (2006). Beyond Presentations: Using PowerPoint as an Effective Instructional Tool. *Gifted Child Today* 29 (4): 29–39. https://doi.org/10.4219/gct-2006-8.

Zou, Bin, dan Jiaying Li. (2015). Exploring mobile apps for English language teaching and learning. Dalam *Critical CALL – Proceedings of the 2015 EUROCALL Conference, Padova, Italy*, 564–68. Research-publishing.net. https://doi.org/10.14705/rpnet.2015.000394.