The Use of ICT in ELT:
How Teacher Should Be Empowered

Arni Fitri, Abdul Aziz Rifa’at
ftitriani45@gmail.com1
aziz_liez@yahoo.co.id2

1STIK Siti Khadijah, Palembang
2STIK Siti Khadijah, Palembang

Received: 27 November 2021   Accepted: 31 December 2021
DOI: 10.24256/ideas.v9i2.2402

Abstract:
ICT has the potential to “bridge the knowledge gap” in terms of improving quality of education, increasing the quantity of quality educational opportunities, making knowledge building possible through borderless and boundless accessibility to resources and people, and reaching populations in remote areas to satisfy their basic right to education. This article presents on how to empower teacher in ELT through ICT. The fact that not all teacher of English in Indonesia are master in ICT, there are some teacher poor in ICT. Teachers’ computer literacy is 54.2%, teacher own internet literacy is 51.4%, teacher current typing skill is 51.4%. This article also present the advantages of ICT in ELT, they are: 1) keeping up with the world, 2) Bringing variety t your work, 3) breaking the routine, 4) getting new experience, 5) being creative and 6) meeting your learners. Empower teacher through ICT refers to a process that includes any communication device or application, which people become powerful enough to engage in, share control of, and influence events and institutions affecting their lives. Empowerment processes through ICT includes 1) teacher professional development such workplace training, seminar, professional meeting; 2) teacher technology management.

Keywords: ELT, ICT, Empower
Introduction

Language is very important in social life, because language has a tight position to every part of life. That is why nobody lives perfectly without language as an instrument. The main function of language is to communicate and interact among human beings, without language human beings cannot express their feeling and communicate with other people.

English as a foreign language in Indonesia taught as an important subject starting from the first grade of elementary school to the senior high school, or even at university level. Learning English involves four skills, such as listening, speaking, reading and writing. English as a global language means a communication in numerous dialects, and also the movement towards an international standard for the language.

(Sulo, 2005) Says that teaching means as an activities to instruct, give an easy way on how to find (not to give) something based on the ability which is owning by the learners. The statement above means the teacher gives such an instruction to the learners how to find their own ability not to give ability to the learners. Besides, Hornby (1995: 1225) says that teaching is to show somebody to do something so that they will be able to do it by themselves. English means that involve four language skills, namely, listening, speaking, reading, writing and the aspect of language such as grammar, vocabulary, pronunciation, etc. On the other hand, teaching English means instruct the learners to find the knowledge that involves four language skills, they are: listening, speaking, reading, writing and the aspect of language such as grammar, vocabulary, pronunciation, etc. Teaching and learning are joint enterprises involving both teacher and students or learners in partnership where the participants have complementary roles and similar status.

English as a foreign language in Indonesia taught as an important subject starting from the seventh grade of junior high school to the senior high school, or even at university level. Learning English involves four skills, such as listening, speaking, reading and writing. English as a global language means a communication in numerous dialects, and also the movement towards an international standard for the language.
English needs to be learned in formal school of Indonesia, leaning English needs motivation and strategies otherwise EFL literacy in Indonesia will be low but the fact that EFL literacy in Indonesia is still low as a whole the literacy skills achievement of the students (N = 200) was still in at the poor level, with the mean of only 54.77. Using 5 levels of achievement, the condition of the students’ literacy skills’ achievement is as follows: excellent was 0.5%, good was 11.5%, average was 37.5%, poor was 35.5%, and very poor was 15% (Diem, 2011). According to PISA 2009 database, Indonesian students’ reading mean score was below the OECD average and puts Indonesia in 57th place out of 65 countries. The score on the students’ ability on the overall reading scale was 402 while the OECD average score was 493. Additional according to EF English Proficiency Index 2012 stated that Indonesia English Proficiency is low and puts Indonesia in 27th place out 54 countries. Strategy is needed in order to improve students’ literacy and one of the strategies is through ICT.

Information and communications technologies (ICT) are being integrated in the teaching-learning process in many learning institutions of the world. It has been learnt that the integration of ICT in education, promote autonomous learning, curriculum differentiation student-centered learning, higher order thinking, problem-solving, cooperative learning.

According to (Tim Indikator TIK Indonesia, 2011) school proportion in using ICT are 22.6% of schools using radio, 48.81% schools use television, 94.38 schools have telephone access, 98% of schools have been using computers and 80.53% of schools have internet access.

However not all teachers of ELT in Indonesia master in ICT, based on (Jeong-Bae Son, 2011) there are some teachers are poor in ICT, see the table 1. Self-Evaluation of Basic Computing Skills (N=72). See table 1

<table>
<thead>
<tr>
<th>Your own computer literacy</th>
<th>Poor</th>
<th>Adequate</th>
<th>Good</th>
<th>Excellent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>8 (11%)</td>
<td>24 (33.3%)</td>
<td>39 (54.2%)</td>
<td>1 (1.4%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Your own Internet literacy</th>
<th>Poor</th>
<th>Adequate</th>
<th>Good</th>
<th>Excellent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>11 (15.3%)</td>
<td>23 (31.9%)</td>
<td>37 (51.4%)</td>
<td>1 (1.4%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Your current typing skills</th>
<th>Poor</th>
<th>Adequate</th>
<th>Good</th>
<th>Excellent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 (0%)</td>
<td>33 (45.8%)</td>
<td>37 (51.4%)</td>
<td>2 (2.8%)</td>
</tr>
</tbody>
</table>
In terms of the use of computer applications, many teachers tended to use word processing, email, Web and multimedia programs frequently whereas they rarely or never used other types of applications such as databases, graphics, concordances, blogs, wikis, online discussion groups, voice chatting and video conferencing programs.

The most often used of ICT means is a computer, which is 6.5 hours per week, internet used is 4.1 hours per week while television only 3.3 hours per week, and the least used is radio which only 2.2 hours per week (Tim Indikator TIK Indonesia, 2011).

**Frequency of Using Computer Applications** (N=73), according to (Jeong-Bae Son, 2011), see table 2.

*Table 2. Frequency of Using Computer Applications*

<table>
<thead>
<tr>
<th></th>
<th>Almost everyday</th>
<th>3-4 times per week</th>
<th>1-2 times per week</th>
<th>1-2 times per month</th>
<th>Rarely</th>
<th>Never used / Do not know</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Word processing</td>
<td>33 (45.2%)</td>
<td>12 (16.4%)</td>
<td>9 (12.3%)</td>
<td>2 (2.7%)</td>
<td>13 (17.8%)</td>
</tr>
<tr>
<td>2</td>
<td>E-mail</td>
<td>12 (16.4%)</td>
<td>9 (12.3%)</td>
<td>7 (9.6%)</td>
<td>7 (9.6%)</td>
<td>22 (30.1%)</td>
</tr>
<tr>
<td>3</td>
<td>World Wide Web</td>
<td>14 (19.2%)</td>
<td>7 (9.6%)</td>
<td>8 (11%)</td>
<td>6 (8.2%)</td>
<td>20 (27.4%)</td>
</tr>
<tr>
<td>4</td>
<td>Database</td>
<td>2 (2.7%)</td>
<td>2 (2.7%)</td>
<td>5 (6.8%)</td>
<td>1 (1.4%)</td>
<td>19 (26%)</td>
</tr>
<tr>
<td>5</td>
<td>Spreadsheet</td>
<td>4 (5.5%)</td>
<td>4 (5.5%)</td>
<td>5 (6.8%)</td>
<td>4 (5.5%)</td>
<td>21 (28.8%)</td>
</tr>
<tr>
<td>6</td>
<td>Graphics</td>
<td>1 (1.4%)</td>
<td>1 (1.4%)</td>
<td>1 (1.4%)</td>
<td>4 (5.5%)</td>
<td>31 (42.5%)</td>
</tr>
<tr>
<td>7</td>
<td>Multimedia</td>
<td>11 (15.1%)</td>
<td>10 (13.7%)</td>
<td>8 (11%)</td>
<td>8 (11%)</td>
<td>19 (26%)</td>
</tr>
</tbody>
</table>
According to (Tim Indikator TIK Indonesia, 2011) the average time by means of ICT for teaching and learning activities is between 2.7 to 3 hours per week. The longest subjects in using ICT are basic skills / computer skills and language, both of which have average value of the same, namely 3. Mathematics and natural science (IPA) have lower average; those are only 2.9 hours per week and 2.8 per week. While other subjects have average usage time that is only 2.7 hours per week.

**ICT in ELT**

ICT has been used in language learning for several decades now; the growing numbers of learners who use one or another form of ICT assisted studying require relevant feedback from professionals who get involved in tutoring. The degree of learner independence in the existing forms of technology assisted language learning varies; this guide deals with just one type of technology assisted learning – blended learning. Based on (Inga Rozgiene, 2008) there are six advantages of using ICT in ELT, they are:

1. Keeping up with the world

Creating an e-society and ensuring access to modern technology have been
adopted as the priority in EU social policies.

If teacher or students want to be up with the current trends and the changing world they can open the doors of the traditional classroom to incorporate the new media and its vast possibilities. Due to some economic (insufficient funding, low salaries and extreme workload) and social factors, in many cultures schools in general and teachers in particular remain one of the most conservative social institutions and professions. Innovations in teaching and learning are directly related to new ways and new tools that correspond to the life style of learners and to those things that attract and motivate them. The Survey has shown that many teachers have a fear of being left behind and fall out of the context of modern life. Using ICT can facilitate keeping up with technical innovations and the changing learning environment.

2. Bringing variety to your work

ICT provides a wide range of sources of language, both in visual and aural forms. The sounds or images of the authentic environment can be easily brought into the session: the learner will find himself in the streets of a foreign town among the famous sights he has just read about and it will be more real than any photo in a text book; or he will hear native speakers’ chatting and use the chance to get a word in.

The application of ICT gives more opportunities for communication between peer learners: there could be tasks for exchanging information in real time or by participating in blogs, team work on projects and other forms of written communication.

This wide exposure to the authentic language facilitated by ICT will give a better insight into the culture of the country and people whose language we study; by incorporating the Internet, the course may become an efficient way of getting to know traditions, specialties, cultural masterpieces and everyday life of the country or people that speak the target language.

Reference materials (on-line dictionaries, e-encyclopedias) and various search mechanisms make it possible to increase learner’s independent work and lead to the re-structuring of the process of learning: face-to-face classroom contacts are combined with individual studies, you can assign tasks to a group of learners, who will collaborate on-line or in another ICT environment.
The application of ICT has considerably enriched the variety of methods, resources and a range of activities for learning languages. Among the most widely used tools and resources the survey points out various digital learning environments (WebCT, Moodle, etc), CD-ROMs / DVD, on-line presentations / texts / pictures etc., also discussion panels, chat-rooms, e-mail and others. There are numerous on-line resources that incorporate various approaches to learning and can be creatively used in blended learning.

The proportion of independent learning can be adjusted and brought into compliance with the teacher’s actual time availability. Besides, ICT offers opportunities that cannot be developed within traditional learning: the increased amount of self-study adds to sustainability of learning skills, which is of primary importance in the rapidly changing world. There is no letup in ICT development; almost every day new software products appear. The new innovative elements of a course, new ways of using a particular gadget stimulate creativity and encourage professional development.

3. Breaking the routine

No matter how good and motivated teachers and learners might be, there is always a moment when both parties feel as if they have had enough of it. What to do? How to break the routine and make learning more enjoyable? Computer based activities can solve the problem. On-line testing, computer based vocabulary or grammar exercises make the process of memorizing and routine checking up less boring and more effective. Common vocabulary development exercises when done on the computer take less time, involve various mechanisms (click and drag, type or tick, click on, listen and repeat, recognize the word you hear, etc), make use of various colors, shapes, photos and pictures. You can use various ways of contextualizing target vocabulary: authentic texts of diverse formats are available on the Internet and on numerous language learning sites. All these activities break the routine of learning words or grammar patterns and add to the positive attitude of both learners and teachers. Face-to-face sessions can be used for further customizing and clearing up more intricate language points.

Another way of escaping the routine of language learning is a variety of language activities that can be performed only through the application of IT. E-mail exchanges between learners or between learners and teachers, panel discussion, whiteboards and chats are most helpful in stimulating self-expression, in sharing ideas and impressions. The scope of exchange may vary from a limited number of course-mates to a much broader audience. The enhanced exposure to opinions and ideas breaks stereotypes and monotony; it enriches the process of learning and makes it
more stimulating.

4. Getting new experience

Technology-assisted ways of learning languages offer new opportunities for professional development. As we have mentioned before, with the advent and spread of ICT, traditional teaching has turned into another type of activity with elements of advising, counseling or facilitating the process of language acquisition. That means that tutors have to apply other approaches to teaching, another perception of the learning process, another set of techniques, actually the whole interaction has changed.

Tutors have to keep up with the rapid development of high technologies and software to be able to select the most appropriate ones and advise their learners on the best ways to use them. Of course, it is impossible to provide the training that would respond to every need or new tools that might appear, but basic initial guidance to this professional area is highly recommended. Once again one should think in terms of acquiring not knowledge but rather some competences (like computer literacy, learning how to use DVD, data bases, search or some other mechanisms) which in combination with a basic knowledge of linguistics, pedagogy, methodology and psychology can provide for sustainable development of professional qualification. Becoming engaged in blended learning means for the tutor a constant movement ahead; the process itself is a most powerful motivation mechanism, where all the agents depend on and enrich each other.

5. Being creative

Another widely commented on advantage of being engaged in blended learning is an opportunity to create your own teaching materials. High technologies do not only provide a huge bank of on-line resources for language learning, they also offer “Do-It-Yourself” possibilities: a tutor can not only update or complete the existing ready-made courses, but he can tailor the course according to the specific needs of his learners. What is more, a tutor can easily group and re-group learners according to specific tasks, levels or some other principles, which might open new possibilities in the deliverance of the course. Once you get the bug of creating your own teaching materials, you will find more and more opportunities for that, which
will have a favorable effect not only on the course itself, but also a profound positive feeling of implementing your goals and wishes.

6. Meeting your learners

Any language is a means of communication; it is a phenomenon of social life. Many on-line courses include communicative activities (discussion, correspondence, problem solving) that develop certain communication and socializing skills. No matter how exciting and attractive computer based learning is, most people express the need to combine it with actual, face-to-face individual or group sessions with instructors or tutors. These sessions may have different objectives and purposes depending on the frequency, participation, regularity and other factors, but they are needed by both tutors and learners to check or possibly adjust the progress and to take away the possible stress that a virtual environment may cause. The human communication in real environment sessions gives a possibility to closer monitor the learner's psychological state and provides an opportunity to share concerns with either tutor or peer-learners.

Furthermore, according to (Department, 2007) when ICT is successfully integrated into teaching and learning, it can ensure a more meaningful interaction of learners with information. ICT can promote the development of advanced cognitive skills such as comprehension, reasoning, problem-solving and creative thinking, as well as the ability of learners to identify and solve problems and make decisions using critical and creative thinking strategies; work effectively with others as members of a team, group, organization and community; organize and manage themselves and their activities responsibly and effectively; collect, analyze, organize and critically evaluate information; communicate effectively using visual, symbolic and/or language skills in various modes; use science and technology effectively and critically, showing responsibility towards the environment and the health of others; and demonstrate an understanding of the world as a set of related systems by recognizing that problems cannot be separated from their contexts.

E-Education outlines the following ICT development levels that are to be included in the framework such as Entry level. The teacher is computer literate and is able to use computers. However, frustrations and insecurities are common in the introduction of ICT. At this level, teachers are likely to lack confidence; Adoption level. The teacher is able to use various ICT, including computers, to support traditional management, administration, teaching and learning, and is able to teach learners how to use ICT; Adaptation level. The teacher is able to use ICT to support everyday classroom activities at an appropriate NCS level, assess the learning that takes place and ensure progression. He/she is able to reflect critically on how ICT changes the teaching and learning processes and to use ICT systems for management and
administration. Productivity increases at this level; Appropriation level. The teacher has a holistic understanding of the ways in which ICT contributes to teaching and learning. He/she has an understanding of the developing nature of ICT, and awareness that it is integral to the structure and purposes of the National Curriculum Standard. He/she has the experience and confidence to reflect on how ICT can influence teaching and learning strategies, and to use new strategies; Innovation level. The teacher is able to develop entirely new learning environments that use ICT as a flexible tool, so that learning becomes collaborative and interactive. ICT is integrated as a flexible tool for whole-school development through redefining classroom environments and creating learning experiences that leverage the power of technology.

**Empowering Teacher Trough ICT**

Empowerment is most often viewed as a process through which people become powerful enough to engage in, share control of, and influence events and institutions affecting their lives.

ICT (information and communications technology - or technologies) is an umbrella term that includes any communication device or application, encompassing: radio, television, cellular phones, computer and network hardware and software, satellite systems and so on, as well as the various services and applications associated with them, such as videoconferencing and distance learning (ICT (information and communications technology - or technologies), 2005). ICT includes technologies such as desktop and laptop computers, software, peripherals and connections to the Internet that are intended to fulfill information processing and communications functions.

Empowering teacher through ICT refers to a process that includes any communication device or application, encompassing: radio, television, cellular phones, computer and network hardware and software, satellite systems and so on, as well as the various services and applications associated with them, such as videoconferencing and distance learning which people become powerful enough to engage in, share control of, and influence events and institutions affecting their lives. Here are some empowerment processes through ICT for teacher;

1. **Teacher Professional Development**

   Professional development is defined as activities that develop an individual's
skills, knowledge, expertise and other characteristics as a teacher (OECD’s, 2010). Professional development refers to many types of educational experiences related to an individual’s work (Mizell, 2010). In this paper the writer discusses three kinds of teacher professional development through ICT, they are; a) workplace training, workplace training refers to the acquisition of knowledge, skills, and competencies as a result of the teaching of vocational or practical skills and knowledge that relate to specific useful competencies; b) training teachers on ICT-related skills within the context of classroom objectives and activities ensures the development of skills in the integrated use of ICT in teaching (Wai-Kong Ng, 2012). School-based training of teachers by their more experienced peers from other schools or senior instructors from the Ministry of Education ensures that teachers are trained in the context of their workplace. In conducting workplace training teachers also need to see a direct link between technology and the curriculum for which they are responsible; c) Seminar, a form of academic instruction, either at an academic institution or offered by a commercial or professional organization (Wikipedia).

In addition, Professional meeting can support teacher knowledge in ICT, a gathering of individuals with related professional interests, often from across the country and even around the world. (Zigmond, 2006) States that there are many benefits to attending a professional meeting they are a) learn about new developments in your area of research. Many people present their latest results at professional meetings. Because it can be a year or two before such work appears in print, such a meeting provides a mechanism to gain the most current information about the field; b) broaden your knowledge of the field, national meetings provide a way to learn about different areas of research, often via general lectures by prominent scientists Get experience making presentations. At most professional meetings there are opportunities present a “poster” or a short talk; c) get feedback on your work, Several dozen to several hundred people will see your presentation and many may provide feedback on your work; d) develop your network of contacts, national meetings provide an opportunity to meet new people and strengthen existing contacts through formal and informal interactions.

2. Teacher Technology Management

Technology has developed in response to man’s needs to solve problems and make life easier. Educators believe that the same principle could apply to schools. Integrating technology in the classroom can facilitate learning and address many educational issues. Schools aim to provide effective educational opportunities for all students. Investing in computer technology at school supports the idea of student centered learning.

Technology Management is set of management disciplines allows organizations to manage their technological fundamentals to create competitive advantage
Technology management. Technology Management can also be defined as the integrated planning, design, optimization, operation and control of technological products, processes and services, a better definition would be the management of the use of technology for human advantage.

Classrooms with computers or computer rooms need organization and management. Teachers need to plan ahead for student rotation in an efficient way. There are many variables that come into play such as the number of computers available for each student and the effectiveness of the learning activities (Deutsch).

(eCoach Opportunity: Classroom Management for Technology Use) States some steps in teacher classroom management for ICT use, they are 1) adapt lesson to include technology; 2) align standards; 3) develop strategies to group students and how to manage different activities going on at the same time; 4) develop plan for equitable use for all students including those with special needs; 5) design, deliver, and assess a learning activity for a variety of student grouping strategies; 6) evaluate and use teacher utility tools for classroom management. Additional according to (Lynne) there are six steps in managing classroom technology, they are i) start small plan one activity that is related to your objective (this is where having just one computer does come in handy—less to go wrong!) The activity does not need to be long, but it should be interesting to the students. Ideally, it is one you can use over a few days, related to an instructional unit, rather than one lesson; ii) the activity should be one that you are familiar with, or have practiced to its conclusion. For example, if the activity involves a lot of links within the activity, make sure the links are not old and broken. The student should be able to work independently, so that you are not called away from the rest of the class; iii) have one student, a high-achieving, cooperative one be the first to try the activity, so there will be less likelihood of the student playing around and s/he will probably stay on task; iv) have this student show others how to complete the activity; v) if age-appropriate, have the student fill out a survey to determine if the activity was enjoyable and educational. Your students like to voice their opinions and will be flattered you asked. vi) if this works out well, expand a bit. For example, rotate students throughout the next few days so that everyone has a chance. Maybe there is a computer lab or laptops you can sign out so that the whole class can work on this activity together.
The ICT-in-Education Toolkit was developed by the UNESCO — Asia and Pacific Regional Bureau for Education (UNESCO Bangkok) in partnership with Knowledge Enterprise LCC, the Academy for Educational Development (AED) and World Bank, ‘to assist education policymakers, planners and practitioners in the process of harnessing the potential of ICTs to meet educational goals and targets efficiently and effectively.’ It consists of six toolboxes of interactive instruments and step-by-step guidelines that help users to map the national, technological, and educational situation; formulate and assess ICT-enhanced programs; plan for physical and human requirements; plan for ICT-enhanced content; generate program costs; create a master plan; and monitor implementation, effectiveness, and impact.

**ICT in Education Toolkit Outline**
Charts 1
ICT in Education Toolkit Outline

ICTs for Education: A Reference Handbook
- Decision Makers' Essentials
- Analytical Review
- Resources
- PowerPoint Presentation

Toolbox 1: Mapping of Present Situation
- Tool 1.1: Mapping of National Vision, Goals, and Plans
- Tool 1.2: Mapping of Educational Context
- Tool 1.3: Mapping of ICTs in Education
- Tool 1.4: Analysis of Dynamics for Change

Toolbox 2: Development of an ICT-Enhanced Program
- Tool 2.1: Identification of Educational Areas for ICT Interventions
- Tool 2.2: Formation of ICT Policy Interventions

Toolbox 3: Planning for Physical and Human Requirements
- Tool 3.1: Locations
- Tool 3.2: Infrastructure
- Tool 3.3: Hardware
- Tool 3.4: Personnel

Toolbox 4: Planning for ICT-Enhanced Content
- Tool 4.1: ICT-Enhanced Content Requirements
- Tool 4.2: Identification & Evaluation of Existing ICT-Enhanced Content
- Tool 4.3: Exploring the Web for Educational Content
- Tool 4.4: Evaluation of Course Authorship and Management Systems
- Tool 4.5: Design & Development of Curricular ICT-Enhanced Content

Toolbox 5: Planning for Implementation: Summation
- Tool 5.1: Cost and Finance
- Tool 5.2: Master Plan

Toolbox 6: Assessment and Subsequent Actions
- Tool 6.1: Evaluation of ICT Interventions
- Tool 6.2: Adjustment and/or Scaling Up
Conclusion

ICT in ELT has been used in language in language for several decades; it has some advantages such as keeping up with the world, bringing variety to work, breaking the routine, getting new experience, being creative, and the last is meeting learners. Here are some activities in empowering teacher through ICT, they are: 1) teacher professional development such as work place training, seminar and professional meeting, 2) teacher technology management. With the help of these ICT tools which are available freely on the internet, can make the second language teaching a fruitful one. It becomes beneficial for teaching a foreign language in the hands of creative and knowledgeable language teachers.

This study hopefully can be perceived as a picture of the current practices in instructional ICT which can be used to plan teacher training efforts based on documented needs. Furthermore, in regard with the government regulation that imposing the rule of the integration of ICT as a means in the teaching and learning process, it is fundamental to equip the teachers with adequate knowledge of the current practice of the integration of ICT.

References


Rouse, Margaret. (2005) ICT information and communications technology - or technologies. Retrieved from ICT information and communications technology - or technologies: http://searchcio-midmarket.techtarget.com/definition/ICT


doi:https://doi.org/10.24256/ideas.v2i2.36


