

Teacher Education policies : Purpose, Trends And The Way Forward

Victor B. Owhotu

(University of Lagos, Nigeria)

1. Introduction

In February 2008, I was privileged to be a guest speaker at the round table/launch of the Africa-Asia project, held in this Faculty, and I would like to thank the Africa-Asia team for kindly inviting me once more to speak at this workshop. At that event,

I spoke to the topic “Quality Basic Education Delivery: The Increasing need for partnership among Asian and African Universities”. I could easily justify the need for such a strategic project by highlighting the common challenges that sub-Saharan Africa and Asia, especially central, South and West Asian countries faced and still face. They include the following:

Ineffective and chronic policy inconsistency, low access to enrollment in primary education, out-of-school children, gender inequalities, adult illiteracy, low national budget/funding for basic education, poor learning achievement, high school dropout rates, low teacher supply, education and training, status and motivation, and inadequate and inexistent infrastructure as well as low or non-existent capacity in new and appropriate technologies.

It was also argued that the considerable dependence on North-South cooperation in the face of dwindling levels of commitment of international donor agencies had not helped educational development generally on both continents, and that South-South dialogue and cooperation would better harness the enormous common potential and strengths in the following areas: inclusion, quality, literacy, institutional and human capacity development and financing (UNESCO, EFA GMR 2008).

As of 2008, out of 129 countries with an EFA development index of 0.3 to 1.0, 25 (including 16 in sub-Saharan Africa, 4 from South West Asia and 1 from East Asia Pacific) were far from achieving EFA by 2015 (UNESCO 2008).

In the case of Nigeria – the only E9 member country in sub-Saharan Africa- the high risk profile has been consistently demonstrated by the results of all the monitoring of learning achievement (MLA) exercises conducted there since the early 1990s. The recent situation analyses (e.g. FME, 2006), the extremely poor results of the 2010 end of secondary school results published by the Examination Agencies (NECO and WAEC) paint an even more alarming situation. It goes without saying that teachers, as usual, took the major blame for the persistently

poor learning outcomes.

Several recommendations to the Africa-Asia Universities Dialogue (AAUD) that were made in 2008 are closely relevant to the topic of this paper, among which was the strong need to:

- initiate qualitative research on best practice and innovation in teacher education,
- promote teacher status enhancement retention motivation and continues training through legislation.
- support regional reform initiatives such as the UNESCO teacher training initiative for sub-Saharan Africa (TTISSA).

In the rest of the paper, critical issues in the purposes , trends and the prospects of teacher education policy are discussed from a comparative perspective.

2. Teacher Education Policies

Purpose

An educational policy is an instrument of governance that provides the rationale philosophy, goals, orientations, strategies, processes and desirable outcomes and out puts that should guide policy designers, education planners and implementers in specific areas of human resource and national development. It aims to provide the most appropriate means to achieve agreed ends or goals. The teaching profession and teachers in particular have a time worn recognition as the key to any successful education system, and only policies that promote the holistic motivation, growth and development of the teaching profession and teachers can yield the desired result that can also be sustainable. Consequently, policy must be inclusive of all contexts and levels of teaching and learning: early childhood, basic, post basic, secondary, technical vocational, tertiary, literacy, adult and non-formal and distance learning.

Furthermore, UNESCO, the global leader and catalyst for reform ,states the evolving nature of policy on teacher education:

Policies for teachers and the teaching profession will need to take into consideration a range of issues, such as the changing role of teachers, HIV and AIDS and Information and Communication Technologies (ICTs). Policies will also need to consider the implications of research for teaching and learning, policy development processes and financial requirements and including recurrent costs, for successful implementation. National regional and global frameworks are also of significance in the opportunities they present for harmonization, collaboration and lesson sharing. (UNESCO, 2007).

More importantly, there is the significant issue that is not often addressed ,which has been examined elsewhere (Owhotu 2010): whether or not teacher education policy should

factor in the development of teachers' capacity in pre-service and in-service training both as knowledgeable, competent and ethical classroom teachers as well as potential social entrepreneurs- during employment, or outside full time employment as independent providers of educational services. The need for the 'shadow industry' is based on the generally poor learning outcomes in the formal education system all over the world, the potential of competent but often underpaid and overworked teachers to offer otherwise critical quality service, and the lucrative nature of the tutorial services. Hurley's (2010) 'manifesto' as it were is as insightful as it is plausible:

You encouraged, taught, and showed them exactly what it takes to learn and to be the best they can be. But now it's your turn. Time to put yourself first and start on your journey to do what's right for you. It's time to finally begin your entrepreneurial dream of starting your own business or perhaps adding a supplementary income to your teacher's salary. Time to do something just for you, And with summer right around the corner, the timing couldn't be better. Plus, parents will spend over 54 billion nation-wide this year on academic tutoring, with a predicted growth of 12 to 15 percent a year. You can see that now is the perfect time for teachers and others to consider starting their own home based business in the hot educational industry (page 1).

It should be made clear at this point that social entrepreneurship in teacher education is a very useful frame work for enhancing innovation in school extracurricular project activities and community related needs based small scale ventures that would add value to the host community or communities. It certainly excludes teachers who, for example, exploit their students by offering paid tuition to those who can afford it, in the same class he or she is paid to teach, and to the disadvantage of the rest of their class.

3. Trends across Countries

A holistic view of the contexts for education shows that current teacher education policies are fairly limited in scope in the sense that they are preoccupied with the core issues of initial training, quality and impact on curriculum reform and on learning achievements. Also, the global issues of teacher recruitment to meet the demand gaps around the world, status enhancement, motivation and retention are critical indicators of holistic and progressive teacher education policy. As Cobb (1999) observes:

Many countries identify "quality teachers" as the goal and focus of their teacher education programs. Quality teachers are described as having some combination of the following attributes: pedagogical knowledge, subject area content knowledge, skills and attitudes necessary for effective teaching, strong understanding of human growth and child development effective communication skills, strong sense of ethics, and capacity for

renewal and ongoing learning. (page 1).

The return on the quality imperative can be felt at two levels: aligning, on the one hand, the characteristics of the ideal teacher and the social responsibility of the profession toward the individual, and community needs. On the other hand, the cumulative input of quality teaching for quality learning can be assured at two distinct levels: general basic education including secondary, technical and vocational education and higher/tertiary education. Both levels need the strongest and most committed policy frameworks with clear implementation goals and strategies, clearly identified needs of ‘at risk’ groups/potential beneficiaries and clearly measurable outcomes/ impacts. Policy trends in Nigeria, Indonesia, Europe, the USA and sub-Saharan Africa will be briefly highlighted, and pointers to the way forward for teacher education will also be discussed.

Nigeria

The Nigerian government published the first ever National Teacher Education Policy (NTEP) document in January 2009 and aims to:

- provide highly knowledgeable, skilled and creative teachers who are capable of producing students who can compete globally;
- ensure that teachers are adequately catered for and made adoptable to our changing world (and are), trained and recruited based on explicit performance standards.
- ensure effective implementation that will guarantee a conducive learning environment and promote learning... (Federal Ministry of Education, 2009a).

More importantly, the implementation phase of the policy (NTEP) is driven by the maxim that no education system [and by extension all the benefits of social and economic development] can rise above the level of its teachers, [level in terms of quality, supply, retention and motivation]. Implementation of the policy is to be in three phases: the ground breaking phase from 2009-2010; the gestation phase from 2011 – 2012; and full blown implementation phase in 2013. However, given the chronic challenges of policy implementation in Nigeria, stakeholders are generally looking forward to the expected results with the usual cautious optimism.

Indonesia

Indonesia’s Teacher Law enforces four basic competencies: pedagogical competency (understanding students, designing and implementing learning methods, evaluating student results and developing professionally); personal competency (having an adult personality and character worthy of imitation); professional competency (theory and practice, subject knowledge, materials and methods, student learning styles, social and general knowledge) and social competency (display good behavior, enlightened attitude, social intercourse at school and in the community; respect and appreciate feelings of others, respect of others’ strengths and weaknesses, good moral values etc.) (Jalal et al., 2009). Indonesia has in recent years showcased

the significant strides that she has made in basic, post basic and very high literacy rates and the implications for sustained teacher recruitment, quality training, motivation and retention. A study of teacher education policy and practices in Indonesia provides useful insights for teacher education providers.

Another development worth mentioning here is The Generation Next project in South East Asia which represents a viable sub regional teacher policy initiative that has generated remarkable focus on quality teacher education and the critical role of information and communication technologies in both formal and non-formal education. The project has been examined elsewhere (Owhotu, 2009). It demonstrates the political will of ASEAN countries, supported by the UNESCO Regional Office in Bangkok to evolve a pragmatic policy framework as well as a comprehensive and productive partnership among the national teacher education ministries and colleges of teacher education.

Europe

The regional development dimension in Europe has stimulated the widening of an otherwise national vision and mission of teacher education policy/framework to embrace the transnational realities such as the European Union/Economic Community. This in turn has given rise to or reinforced existing regional networks for education generally and teacher education policy in particular. The Teacher Education Policy in Europe (TEPE), The Association for Teacher Education in Europe (ATEE), Thematic Network on Teacher Education in Europe (TNTEE) are examples of vibrant movements that focus on the following teacher education policy components.

- Culture and politics of professional formation;
- The development of innovative strategies of cooperation between the institutions schools and education services;
- Promoting lifelong learning in and through teacher education evolving models of professional development;
- Teacher education as a powerful learning environment-changing the learning culture of teacher education;
- Searching for a missing link-subject didactics as the sciences of a teaching profession;
- Developing a reflective practice of teachers' work and teacher education by partnership between researchers and practitioners;
- Intercultural education in teacher education, and
- Gender and teacher education.(Hudson & Zgaga, 2008: 7-15).

The focus of the Association for Teacher Education in Europe (ATEE) has been on the quality of teachers through the development of measurable indicators to stimulate and identify teacher quality with a view to ensuring a sustained track record of strategic interventions and reform. Four main criteria for developing teacher quality indicators have been identified as critical to policy design and implementation processes as stakeholders' shared language and

ownership:

- Should take into account the concerns and perspectives of the different stakeholders (government, school leaders, teachers, teacher education, parents/public).
- Should identify the quality of teachers reflect these values and attributes of the teaching profession that enables reflective thinking, continuing professional development autonomy, responsibility for creative research and personal judgment.
- Should reflect the collaborative nature of teachers by allowing room in professional profiles for flexibility, personal styles and variety.
- Should be focused not only on the teaching process itself but also on the development of teaching materials, school innovation and knowledge development through systematic reflection and research (ATEE, 2006).

Equally important is the role of Labour Unions in recognizing the quality imperative but also the enforcement of continuing teacher development as an enforceable rights issue. Accordingly, the Executive Board of the European Trade Union Committee on Education (ETUCE) adopted a policy paper on teacher education in Europe in 2008 with three focal policy points:

- improving initial teacher education to ensure high quality pedagogical and professional training of new teachers;
- recruiting and re-training a sufficient supply of qualified teachers with at least a master's degree in order to maintain and improve the quality of the teaching profession;
- ensuring that professional development is an entitlement for teachers and that it is integrated into the teaching profession. (Romer, 2008).

The 2009 Teacher Education Policy in Europe conference highlighted the following noteworthy and forward looking recommendations:

- greater recognition of the need for teacher education to be based on a balance and interconnection between a strong research-based curriculum in higher education and strong support in the process of identify formation of teachers in practice;
- greater attention to strengthening the professionalism of teacher education in the first instance;
- the development of a common framework of quality indicators for teacher education in Europe;
- three way communication between researchers policy makers and decision makes at the institutional, local and national level and TE practitioners at the institutional level and as mentors in schools;
- systemic quality enhancement. [<http://tepe.files.wordpress.com>].

United States of America

In the United States of America, reform of teacher education policy and practices has taken

centre stage in the form of the Teacher for a New Era (TNE) Initiative because “over the past several decades, teacher education has been subjected to both scathing criticism and innumerable efforts designed to reform it or to save it from being dismantled”. Its ultimate goal is “to improve kindergarten through twelfth grade (K-12) student outcomes by improving the quality of the teachers in K-12 schools” (Kirby, McCombs, Barney & Naftel 2006, page iii).

Sub Saharan Africa

A balanced teacher education policy aims to address both the quantitative and qualitative gaps and imperatives. Today, there is an acute demand for teachers around the world. A recent overview of the crisis shows that whereas four countries of the Arab states had severe teacher shortages, four in East Asia and the Pacific Region, two in South and West Asia (Afghanistan and Bangladesh) thirty- seven countries in sub-Saharan Africa (excluding Nigeria) are faced with severe primary teacher shortages, which is “more than two thirds of the worlds countries(UNESCO Institute of Statistics, 2009). It was precisely for this worrying situation that the UNESCO Teacher Training Initiative for sub-Saharan Africa (TTISSA) was launched in 2006, and with particular emphasis on closing the quantity and quality gaps in the sub region.

TTISSA is of critical importance to the development of teacher education policy in sub-Saharan Africa. This flagship reform initiative is a “10 year programme (2006-2015) designed to respond to the challenges of achieving EFA in sub-Saharan Africa. It advocates a holistic approach to meeting both the quantitative and qualitative challenges associated with teacher development with the following expected results: “status and working conditions of teachers improved; teacher management and administration structures improved; appropriate teacher policies developed and quality and coherence of teacher professional development enhanced.” (UNESCO 2007, page V).

Typically, however, the first external evaluation of TTISSA published in 2009, on the four expected results revealed that a lot of challenges exist even at this early stage of implementation in the 17 pilot countries, including Nigeria.

A critical component of teacher education policy is the development and deployment of teachers’ ICT skills and knowledge. UNESCO has led this strategic component since the 1990s when ICTs and poverty reduction were adopted by the General Conference of UNESCO as the themes of its successive cross-cutting themes. Furthermore the Organization has published educational material and toolkits on ICTs in schools and teacher education and training programmes that schools and educational institutions and focal agencies should find very cost effective and user-friendly (see UNESCO 2002).

The examples of policy in a number of countries reviewed here point to some of the contending issues and dilemmas of national, regional and global concern about continuing teacher education reform which reiterates quality as the most critical factor. However, the environment for quality must be understood in terms of all possible contending forces, ranging from policy inconsistencies, focus on empirical research for teacher reform, educational planning coordination and implementation, varying or different concepts of minimum

standards/bench marks, undeveloped and or unaligned quality indicators to stated goals and strategies, quality control within institutions and quality assurance from national inspectorate, the regulatory/ accreditation agencies and, where appropriate, regional initiatives such as TTISSA, the Association for Teacher Education in Europe (ATEE) or the European Trade Union Committee for Education (ETUCE).

Perhaps the most critical factor is supervised teaching/clinical practices which bring theory, principles, personality, methods and results together harmoniously, or otherwise, in the contexts of the classroom/learning space. For instance Cobb (1999) presents the following variations as practiced in several countries.

- “In the U.S, Canada and Japan, teachers at all levels are prepared the same. Candidates are typically prepared through bachelor’s degree programmes or 5th-year programs that can lead to master’s degree”. (page 1).
- “Practice teaching experiences for primary teachers range from several 4-week sessions in New Zealand to a full-year internship in Germany, France, Luxemburg, Belgium and Chinese Taipei” (page2).
- “Teachers preparing in Germany face two full years of internship that includes seminar and classroom experiences, colleges and school based faculties evaluate at least 25 lessons. At the end of this period candidates go through a variety of portfolio and papers assessments prior to teaching (quoting Waldrop, 1991). (page 3).
- “The trend toward establishing specific school and college/university partnerships that create linkages between teacher education course work and clinical practice is gaining (ground)” (page 3).

The major lesson here is that teacher education design cannot be done in isolation of the complex and dynamic contexts (political socio economic and cultural) in which an education system and teacher education are located. As Wang et al (2010:395-402) point out:

not only are the contextual challenges that teacher education programs face in reform efforts related to the nature of teaching professionals, school systems, and their students but these contextual factors are constantly changing, which also influences approaches to reform work. We lack a deeper understanding of how this dynamic of constant change affects the relationship between reform efforts and contextual factors.

4. The Next Steps/Way Forward

The logical next step or way forward must be determined by the gaps observed in the literature with regard to a lack of policy or policy inconsistency, misaligned goals, input, processes, outcomes and output/impact of education systems and the specific roles of teaching and learning. In most cases, these roles are prescribed in the codes or enabling laws and policies that govern schools and teacher education as well as in the implementation guidelines that are designed to ensure compliance, quality and sustenance.

Three essential empirically or research based strategies are most instructive for the logical next steps that should engage all stakeholders. These are:

- Understanding the role of school systems for the 21st century;
- Understanding the objectives of enabling instruments such as the Teachers code established by the regulatory agencies;
- Understanding and applying rationally, implementation guidelines that are clearly aligned to the objectives and roles of school systems, teacher education and the contextual challenges and dilemmas.

It is obvious that school systems, teachers and policy implementers should be given the high level of capacity development and enabling conditions and environment for them to have the desirable impacts on teacher education, professional practice and learning outcomes at all levels.

School systems

There are several questions that all stakeholders should ponder collectively in their varying contexts (ATEE, 2010):

- How can schools be organized in such a way as to provide all students with the full range of key competences to make learning a lifelong activity?
- How can school systems contribute to supporting long term sustainable economic growth in Europe, Africa, Asia, the small Island State etc?
- How can school communities help to prepare young people to be responsible citizens, in line with fundamental values much as peace and tolerance of diversity?
- How can school staff be trained and supported to meet the challenge they face?

Teachers

Nigeria's teacher's regulatory agency, the Teachers Registration Council of Nigeria (TRCN), published the Teachers Code (as next steps) to reinforce and sustain teacher education policies and ethical practices. The objectives of the Teacher's Code of Conduct (2004) are unambiguous. They seek to achieve the next steps in producing the ideal teacher from the social, economic, moral, professional and legal perspective as well as foster a keen sense of ownership in all stakeholders:

- re-awaken the sense of self-esteem, dignity, honour, selfless service and moral rectitude in the teacher;
- protect the teachers' age-long position of nobility and leadership in the social, moral, and intellectual world;
- build a strong moral foundation for the actualization of an educational system that can compete favorably in the global community;
- boost public confidence in the ability of the teaching profession to regulate itself and to bequeath to the nation products that are capable of making maximum contribution towards the development of the nation in particular and the world in general;

- provide an objective yardstick for the assessment of the teacher’s conduct and discharge of professional duties. Help to guarantee the professional safety of the professionals and sustenance of the desired prestige in the teaching profession;
- spell out the type of relationship that should exist between the teachers on one hand and their colleagues, students and other persons who would interact with them from time to time;
- clarify teachers’ rights, privileges, and obligations and their legal bases.

5. Implementation (in an enabled environment)

Nigeria’s National Teacher Education Policy (NTEP) is a clear example of the fact that teaching has not been considered and did not have the status of a profession until the passing of the Teachers Registration Council Act. Furthermore, the 2009 NTEP is a clear recognition:

- of the serious perennial crises in the education sector and teacher education over the last two decades;
- of the fact that Nigeria had adopted education as an instrument per excellence for national development; and
- that no nation’s education system can rise above the level of its teachers.

Perhaps the most pertinent issue is that of providing the enabling environment and conditions for implementing the NTEP which include the political (Federal Government, State Government, and Local Government), Regulatory (The National Commission for Colleges of Education NCCE; the National Universities Commission NUC; NTI; NBTE), professional (“The systematic link between pre-and in-service teacher education must become widely accepted” - FME 2009a), institutional (“Tertiary institution must allow NTEP to guide the organization/development of their programmers, staff profile, new teaching learning orientation) and change management level as a major task of introducing a “mechanism for monitoring progress in the implementation of NTEP and reviewing it on a continuous basis”. (page 5) In terms of incentives, the NTEP envisages a series of incentives as an integral strategy of the policy which are designed to “attract the right type of candidates-while each incentive would need its own specific (appropriate) implementation methodology” (page 6).

Nigeria has, as usual, presented an elaborate strategy for implementation. The perennial failures are all too well known. Consequently, the 2009 TTISSA evaluation report and the lessons learned are very instructive.

It states, inter alia, that :

Through TTISSA is recognized as relevant and represents one of UNESCO’s major initiatives, there have also been many challenges in terms of its implementation. Among them: lack of understanding of TTISSA’s upstream mandate and pressure to implement more down-stream activities, an ambitious and outdated Logical Framework (Log

frame) that cannot be adequately monitored and assessed against, lack of human and financial resources, uneven distribution of existing financial resources among countries (particularly extra-budgetary funds), unclear delineation of roles between UNESCO's Section for Teacher Education (ED/HED/TED), Regional Bureau for Education in Africa (BREDA) and the International Institute for Capacity Building in Africa (IICBA) and lack of communication and coordination between them, insufficient documentation and sharing of accomplishment and an unclear future with the Initiative's upcoming decentralization to BREDA. (UNESCO, 2009, page 2)

6. Conclusion

Unless stakeholders know and agree on what teacher education policy should be, and how crucial it is for today's and tomorrow's inclusive education systems to have indicators of quality learning for sustainable human resource and national development for global competitiveness, the vicious cycle that has characterized educational systems in sub-Saharan Africa will persist. The challenge of the Africa-Asia Universities project is precisely to engage or re-engage with major national, regional and global teacher education frameworks.

7. Recommendations

Against the backdrop of the issues and challenges highlighted in this paper, it is strongly recommended that the Africa Asia Universities dialogue project strive to achieve the following:

- Draw up an Africa- Asia higher education action plan for basic education and teacher development for 2011-2015 in the framework of South-South Cooperation;
- Initiate qualitative research on best practices and innovation, teacher education in-service training, teachers' personal and professional needs and status enhancement through legislation and retention;
- Support such regional initiatives as the teacher training initiative in sub-Saharan Africa (TTISSA).

References

- Association for Teacher Education in Europe (2010). *Response from the Association for Teacher Education in Europe (ATEE) to the public consultation on Schools for the 21st Century.*
- Association for Teacher Education in Europe (2006). *The quality of teachers: recommendations on the development of indicators to identify quality teachers.* Policy paper, October, p.3.
- Cobb, V.I. (1999). *International Comparison of Teacher Education*, Washington: ERIC DIGEST, NO. ED 436486.
- European Trade Union Committee on Education (2008).
- Federal Ministry of Education (2006). *Education Sector Situation Analysis (Draft Report)*,

- Abuja: FME, November, 2006.
- Federal Ministry of Education (2009a). *National Teacher Education Policy*. Abuja: FME, January 2009.
- Federal Ministry of Education (2009b). *Implementation Guidelines for the Teacher Education Policy*. Abuja: FME/ENHANSE/USAID, March, 2009.
- Federal Republic of Nigeria (2004). *National Policy on Education*, NERDC Press: Abuja.
<http://tepe.files.wordpress.com/2010/01/tepe-recommendations 20092.pdf>
- Hudson, B. & Zgaga, P. (2008) (Eds). *Introduction in Teacher Education Policy in Europe: A voice of Higher Education Institutions*, Sweden: Umea University, pp. 7-15.
- Jalal, F., Samani, M., Chang, M-C., Stevenson, R., Ragatz, A.B. & Negara, S. (2009). *Teacher Certification in Indonesia: A Strategy for Teacher Quality Improvement*, Ministry of National Education.
- Kirby, S.N., McCombs, J.S., Barney, H. & Naftel, S. (2006). *Reforming Teacher Education: Something Old, Something New*. Pittsburg: Rand Corporation.
- Hurley, L. (2010). *Teachers become part-time entrepreneurs*. www.ldrc.ca/contents/view_article/326/
- Owhotu, V.B. (2009). *ICTs in Basic and Post Basic Education: A Comparative Perspective*. Journal of the WCCI Nigeria Chapter (forthcoming).
- Owhotu, V.B. (2010). *Entrepreneurship in Teacher Education: Issues, trends and prospects*. (Book Chapter, forthcoming).
- Romer, M. (2008). *Foreword*. In *Teacher Education Policy in Europe: An ETUCE Policy paper adopted by the Executive Board of ETUCE*, p.5.
- UNESCO (2002). *Information and Communication Technology in Education*. A Curriculum for Schools and Programme of Teacher Development, Paris: UNESCO.
- UNESCO (2007). *Teacher Education Policy Forum for Sub-Saharam Africa: Report*, Paris: 6-9 November, 2007.
- UNESCO (2008). *Education For All Global Monitoring Report*, Pariis: UNESCO Publishing.
- UNESCO Institute of Statistics (2009). *Projecting the Global Demand for Teachers: Meeting the Goal of Universal Primary Education by 2015*, Information Sheet No.3, 2009.
- UNESCO (2009). *Evaluation of the Teacher Training Initiative for Sub-Saharan Africa (TTISSA)*, UNESCO: ED/HED/TED/2009/PI/58.
- Wang, O.S.J., Klecka, C.L., Spalding, E. & Lin, E. (2010). *Understanding Teacher Education Reform*. *Journal of Teacher Education*, Vol.2, pp.395-402.